FOR PUBLICATION

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

EPIC GAMES, INC., *Plaintiff-counter-defendant-Appellant,* v. APPLE, INC., *Defendant-counter-claimant- Appellee.*	No. 21-16506 D.C. No. 4:20-cv-05640-YGR OPINION
EPIC GAMES, INC., *Plaintiff-counter-defendant-Appellee,* v. APPLE, INC., *Defendant-counter-claimant-Appellant.*	No. 21-16695 D.C. No. 4:20-cv-05640-YGR

Appeal from the United States District Court
for the Northern District of California
Yvonne Gonzalez Rogers, District Judge, Presiding

Argued and Submitted November 14, 2022
San Francisco, California

Filed April 24, 2023

Before: SIDNEY R. THOMAS and MILAN D. SMITH, JR., Circuit Judges, and MICHAEL J. MCSHANE,[*] District Judge.

Opinion by Judge Milan D. Smith, Jr.;
Partial Concurrence and Partial Dissent by Judge S.R. Thomas

SUMMARY[**]

Antitrust

The panel affirmed in part and reversed in part the district court's judgment, after a bench trial, against Epic Games, Inc., on its Sherman Act claims for restraint of trade, tying, and monopoly maintenance against Apple, Inc.; in favor of Epic on its claim under California's Unfair Competition Law; against Epic on Apple's claim for breach of contract; and against Apple on its claim for attorney fees. The panel affirmed except for the district court's ruling respecting attorney fees, where it reversed and remanded for further proceedings.

[*] The Honorable Michael J. McShane, United States District Judge for the District of Oregon, sitting by designation.

[**] This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

The panel explained that, when Apple opened the iPhone to third-party app developers, it created a "walled garden," rather than an open ecosystem in which developers and users could transact freely without mediation from Apple. Epic alleged that Apple acted unlawfully by restricting app distribution on iOS devices to Apple's App Store, requiring in-app purchases on iOS devices to use Apple's in-app payment processor, and limiting the ability of app developers to communicate the availability of alternative payment options to iOS device users. These restrictions were imposed under the Developer Program Licensing Agreement ("DPLA"), which developers were required to sign in order to distribute apps to iOS users. The district court rejected Epic's Sherman Act §§ 1 and 2 claims challenging the first and second restrictions, principally on the factual grounds that Epic failed to propose viable less restrictive alternatives to Apple's restrictions. The district court concluded that the third restriction was unfair pursuant to the California UCL and enjoined Apple from enforcing it against any developer. The district court held that Epic breached its contract with Apple but was not obligated to pay Apple's attorney fees.

On Epic's appeal, the panel affirmed the district court's denial of antitrust liability and its corresponding rejection of Epic's illegality defense to Apple's breach of contract counter-claim. The panel held that the district court erred as a matter of law in defining the relevant antitrust market and in holding that a non-negotiated contract of adhesion, such as the DPLA, falls outside the scope of Sherman Act § 1, but those errors were harmless. The panel held that, independent of the district court's errors, Epic failed to establish, as a factual matter, its proposed market definition and the existence of any substantially less restrictive

alternative means for Apple to accomplish the procompetitive justifications supporting iOS's walled-garden ecosystem.

On Apple's cross-appeal, the panel affirmed as to the district court's UCL ruling in favor of Epic, holding that the district court did not clearly err in finding that Epic was injured, err as a matter of law when applying California's flexible liability standards, or abuse its discretion when fashioning equitable relief. Reversing in part, the panel held that the district court erred when it ruled that Apple was not entitled to attorney fees pursuant to the DPLA's indemnification provision.

Concurring in part and dissenting in part, Judge S.R. Thomas wrote that he fully agreed with the majority that the district court properly granted Epic injunctive relief on its California UCL claims. Judge S.R. Thomas also fully agreed that the district court properly rejected Epic's illegality defenses to the DPLA but that, contrary to the district court's decision, the DPLA did require Epic to pay attorney fees for its breach. On the federal claims, Judge S.R. Thomas also agreed that the district court erred in defining the relevant market and erred when it held that a non-negotiated contract of adhesion falls outside the scope of Sherman Act § 1. Unlike the majority, however, Judge S.R. Thomas would not conclude that these errors were harmless because they related to threshold analytical steps and affected Epic's substantial rights. He would remand for the district court to re-analyze the case using the proper threshold determination of the relevant market.

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OPINION

M. SMITH, Circuit Judge:

Epic Games, Inc. sued Apple, Inc. pursuant to the Sherman Act, 15 U.S.C. §§ 1–2, and California's Unfair Competition Law (UCL), Cal. Bus. & Prof. Code § 17200 *et seq*. Epic contends that Apple acted unlawfully by restricting app distribution on iOS devices to Apple's App Store, requiring in-app purchases on iOS devices to use Apple's in-app payment processor, and limiting the ability of app developers to communicate the availability of alternative payment options to iOS device users. Apple counter-sued for breach of contract and indemnification for its attorney fees arising from this litigation.

After a sixteen-day bench trial involving dozens of witnesses and nine hundred exhibits, the district court rejected Epic's Sherman Act claims challenging the first and second of the above restrictions—principally on the factual grounds that Epic failed to propose viable less restrictive alternatives to Apple's restrictions. The court then concluded that the third restriction is unfair pursuant to the UCL and enjoined Apple from enforcing it against any developer. Finally, it held that Epic breached a contract with Apple but was not obligated to pay Apple's attorney fees. Epic appeals the district court's Sherman Act and breach of contract rulings; Apple cross-appeals the district court's UCL and attorney fees rulings. We affirm the district court, except for its ruling respecting attorney fees, where we reverse and remand for further proceedings.

FACTUAL AND PROCEDURAL HISTORY

I. The Parties

Apple is a multi-trillion-dollar technology company that, of particular relevance here, sells desktop and laptop computers (Macs), smartphones (iPhones), and tablets (iPads). In 2007, Apple entered, and revolutionized, the smartphone market with the iPhone—offering consumers, through a then-novel multi-touch interface, access to email, the internet, and several preinstalled "native" apps that Apple had developed itself. Shortly after the iPhone's debut, Apple decided to move on from its native-apps-only approach and open the iPhone's (and later, the iPad's) operating system (iOS) to third-party apps.[1]

This approach created a "symbiotic" relationship: Apple provides app developers with a substantial consumer base, and Apple benefits from increased consumer appeal given the ever-expanding pool of iOS apps. Apple now has about a 15% market share in the global smartphone market with over 1 billion iPhone users, and there are over 30 million iOS app developers. Considering only video game apps, the number of iOS games has grown from 131 in the early days of the iPhone to over 300,000 by the time this case was brought to trial. These gaming apps generate an estimated $100 billion in annual revenue.

Despite this general symbiosis, there is periodic friction between Apple and app developers. That is because Apple, when it opened the iPhone to third-party developers, did not

[1] The iPad has its own operating system (iPadOS) that is derived from iOS. For convenience, we use "iOS" to refer to both the iPhone and iPad's operating systems and collectively refer to iPhones and iPads as "iOS devices."

create an entirely open ecosystem in which developers and users could transact freely without any mediation. Instead, Apple created a "walled garden" in which Apple plays a significant curating role.[2] Developers can distribute their apps to iOS devices only through Apple's App Store and after Apple has reviewed an app to ensure that it meets certain security, privacy, content, and reliability requirements. Developers are also required to use Apple's in-app payment processor (IAP) for any purchases that occur within their apps. Subject to some exceptions, Apple collects a 30% commission on initial app purchases (downloading an app from the App Store) and subsequent in-app purchases (purchasing add-on content within an app).

Epic is a multi-billion-dollar video game company with three primary lines of business, each of which figures into various aspects of the parties' appeals. First, Epic is a video game developer—best known for the immensely popular *Fortnite*, which has over 400 million users worldwide across gaming consoles, computers, smartphones, and tablets. Epic monetizes *Fortnite* using a "freemium" model: The game is free to download, but a user can purchase certain content within the game, ranging from game modes to cosmetic upgrades for the user's character. *Fortnite* is also notable as one of the first major video games to feature "cross-play," "cross-progression," and "cross-wallet." Cross-play permits users on different platforms to play with one another. Smartphone users, for example, can play against friends on gaming consoles. Cross-progression allows users to retain their in-game progress across every device they own. Users

[2] Many game consoles—including the Microsoft Xbox, Nintendo Switch, and Sony PlayStation—provide ecosystems that can similarly be labeled "walled gardens."

can, for example, play *Fortnite* in the morning on their smartphones and then pick up with their progress saved on their gaming consoles in the evening. Cross-wallet allows users to spend *Fortnite*'s in-game currency on one device even if they purchased it on another. This cross-functionality gives the estimated 32 to 52% of *Fortnite* users who own multiple gaming devices flexibility regarding where and how they play as well as on which devices they make in-game purchases.

Second, Epic is the parent company of a gaming-software developer. Epic International (a Swiss subsidiary) licenses *Unreal Engine* to game developers. *Unreal Engine* offers developers a suite of tools to create three-dimensional content; in return, Epic International receives 5% of a licensee's gross revenue from a product developed using *Unreal Engine* after that product generates $1,000,000 in revenue. Although *Unreal Engine* is not on Apple's App Store, Epic International does offer several complementary apps there. *Unreal Remote* and *Live Link Face*, for example, allow users to capture live-action footage and then view it on *Unreal Engine*. Thus, Epic—through its subsidiary—continues to be affected by the policies that govern the App Store.

Third, Epic is a video game publisher and distributor. It offers the Epic Games Store as a game-transaction platform on PC computers and Macs and seeks to do the same for iOS devices. As a distributor, Epic makes a game available for download on the Epic Games Store and covers the direct costs of distribution; in exchange, Epic receives a 12% commission—a below-cost commission that sacrifices short-term profitability to build market share. The Epic Games Store has over 180 million registered accounts and over 50 million monthly active users. Through the Epic

Games Store, Epic is a would-be competitor of Apple for iOS game distribution and a direct competitor when it comes to games that feature cross-platform functionality like *Fortnite*.

II. The Developer Program Licensing Agreement

Apple creates its walled-garden ecosystem through both technical and contractual means. To distribute apps to iOS users, a developer must pay a flat $99 fee and execute the Developer Program Licensing Agreement (DPLA). The DPLA is a contract of adhesion; out of the millions of registered iOS developers, only a handful have convinced Apple to modify its terms.

By agreeing to the DPLA, developers unlock access to Apple's vast consumer base—the over 1 billion users that make up about 15% of global smartphone users. They also receive tools that facilitate the development of iOS aps, including advanced application-programming interfaces, beta software, and an app-testing software. In essence, Apple uses the DPLA to license its IP to developers in exchange for a $99 fee and an ongoing 30% commission on developers' iOS revenue.

The DPLA contains the three provisions that give rise to this lawsuit and were mentioned in the introduction. First, developers can distribute iOS apps only through the App Store (the distribution restriction). Epic Games, for example, cannot make the Epic Games Store available as an iOS app and then offer *Fortnite* for download through that app. Second, developers must use Apple's IAP to process in-app payments (the IAP requirement). Both initial downloads (where an app is not free) and in-app payments are subject to a 30% commission. Third, developers cannot communicate out-of-app payment methods through certain

mechanisms such as in-app links (the anti-steering provision). "Apps and their metadata may not include buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than [IAP]." Nor can developers use "points of contact obtained from account registration within the app (like email or text) [to] encourage users to use a purchasing method other than [IAP]."

III. Apple and Epic's Business Relationship

In 2010, Epic agreed to the DPLA. Over the next few years, Epic released three games for iOS, each of which Apple promoted at major events. In 2015, however, Epic began objecting to Apple's walled-garden approach. Epic's CEO Tim Sweeney argued, in an email seeking a meeting with Apple senior leadership, that it "doesn't seem tenable for Apple to be the sole arbiter of expression and commerce" for iOS users, and explained that Epic runs a competing game-transaction platform that it "would love to eventually" offer on iOS. Nothing came of this email, and Epic continued to offer games on iOS while complying with the DPLA's terms. In 2018, Epic released *Fortnite* on iOS—amassing about 115 million iOS users.

In 2020, Epic renewed the DPLA with Apple but sought a "side letter" modifying its terms. In particular, Epic desired to offer iOS users alternatives for distribution (the Epic Games Store) and in-app payment processing (Epic Direct Pay). Apple flatly rejected this offer, stating: "We understand this might be in Epic's financial interests, but Apple strongly believes these rules are vital to the health of the Apple platform and carry enormous benefits for both consumers and developers. The guiding principle of the App Store is to prove a safe, secure, and reliable experience for users . . . ."

Once Apple rejected its offer, Epic kicked into full gear an initiative called "Project Liberty": a two-part plan it had been developing since 2019 to undermine Apple's control over software distribution and payment processing on iOS devices, as well as Google's influence over Android devices. Project Liberty coupled a media campaign against Apple and Google with a software update expressly designed to circumvent Apple's IAP restriction. On the media-campaign side, Epic lowered the price of *Fortnite*'s in-app purchases on all platforms but Apple's App Store and Google's Google Play Store; it formed an advocacy group (the Coalition for App Fairness), tasking it with "generating continuous media . . . pressure" on Apple and Google; and it ran advertisements portraying Apple and Google as the "bad guys" standing in the way of Epic's attempt to pass cost-savings onto consumers.

On the IAP-circumvention side, Epic submitted a *Fortnite* software update (which Epic calls a "hotfix") to Apple for review containing undisclosed code that, once activated, would enable *Fortnite* users to make in-game purchases without using Apple's IAP. Unaware of this undisclosed code, Apple approved the update and it was made available to iOS users. Shortly thereafter Epic activated the undisclosed code and opened its IAP alternative to users. That same day, Apple became aware of the hotfix and removed *Fortnite* from the App Store. Apple informed Epic that it had two weeks to cure its breaches of the DPLA, or otherwise Apple would terminate Epic Games' developer account.

IV. Procedural History

A. Pre-Trial Proceedings

Only three days after Apple removed *Fortnite* from the App Store, Epic filed a 62-page complaint against Apple in the Northern District of California seeking a temporary restraining order (TRO) reinstating *Fortnite* and enjoining Apple from terminating Epic's iOS developer account.[3] The district court granted Epic's prayer in part and denied in part—leaving *Fortnite* off the App Store but temporarily preventing Apple from taking any adverse action regarding Epic's developer account. After the TRO expired, Apple terminated Epic's developer account. The court then issued a preliminary injunction preventing Apple from terminating the developer accounts of Epic's subsidiaries (including Epic International) and scheduled a bench trial on an expedited basis, with trial beginning just about eight months after Epic filed its complaint.

Epic brought claims for permanent injunctive relief pursuant to the Sherman Act and the UCL. Epic's requested relief, though somewhat vague, would essentially convert iOS into an entirely open platform: Developers would be free to distribute apps through any means they wish and use any in-app payment processor they choose. Taken together, this relief would create a pathway for developers to bypass Apple's 30% commission altogether, though Epic made open-ended assurances at trial that its relief would allow

[3] The same day, Epic filed a 60-page complaint against Google, challenging its policies regarding the Google Play Store on Android devices—*i.e.*, smartphones and tablets that use the main operating-system alternative to iOS. *See* Complaint for Injunctive Relief, *Epic Games, Inc. v. Google LLC*, No. 3:20-cv-05671 (filed Aug. 13, 2020 N.D. Cal.).

Apple to collect a commission—just not in the manner that the DPLA establishes. Apple brought counter-claims for breach of contract and indemnification for its attorney fees related to this litigation.[4]

B. The District Court's Rule 52 Order

After a sixteen-day bench trial, the district court issued a 180-page order pursuant to Federal Rule 52 detailing its findings of facts and conclusions of law.

1. Market Definition

The district court began its analysis by defining the relevant market for Epic's Sherman Act claims. Epic proposed two *single-brand* markets: the *aftermarkets* for iOS app distribution and iOS in-app payment solutions, derived from a *foremarket* for smartphone operating systems. Apple, by contrast, proposed the market for *all* video game transactions, whether those transactions occur on a smartphone, a gaming console, or elsewhere. The district court ultimately found a market between those the parties proposed: mobile-game transactions—*i.e.*, game transactions on iOS and Android smartphones and tablets. Compared to Epic's proposed aftermarkets, the district court's relevant market was both broader and narrower—broader in that it declined to focus exclusively on iOS, but narrower in that it considered only video game transactions instead of all app transactions. Compared to Apple's proposed market, the district court's relevant market was

[4] We omit any discussion of the following claims that the parties asserted below but do not address before our court: (1) Epic's Cartwright Act claims; (2) Apple's counter-claim for breach of the implied covenant of good faith and fair dealing; and (3) Apple's counter-claim for unjust enrichment.

narrower—excluding game-console and streaming-service transactions.

The district court rejected Epic's proposed single-brand markets on several grounds. It held that there was no foremarket for smartphone and tablet operating systems because Apple does not license or sell iOS. More critically, it analyzed Epic's aftermarkets in the alternative and found a failure of proof. Epic presented no evidence regarding whether consumers unknowingly lock themselves into Apple's app-distribution and IAP restrictions when they buy iOS devices. A natural experiment facilitated by Apple's removal of *Fortnite* from the App Store showed that iOS *Fortnite* users switched about 87% of their pre-removal iOS spending to other platforms—suggesting substitutionality between the App Store and other game-transaction platforms. The district court also rejected Apple's relevant market-definition expert as "weakly probative" and "more interested in a result [that] would assist his client than in providing any objective ground to assist the court in its decision-making" (cleaned up). Among other flaws, the expert's analysis contradicted his own academic articles on how to analyze two-sided markets; used consumer-survey wording that departed from well-established market-definition principles; failed to account for holiday-season idiosyncrasies; and excluded minors (who are an important segment of mobile-game purchasers). The district court then turned to Apple's proposed relevant market definition and refined it from *all* game transactions to *mobile* game transactions by relying extensively on the "practical indicia" of markets enumerated in the Supreme Court's decision in *Brown Shoe v. United States*, 370 U.S. 294, 325 (1962).

2. Sherman Act Section 1: Restraint of Trade

The district court then rejected Epic's Sherman Act Section 1 restraint-of-trade-claim. As a threshold matter, the court held that the DPLA was not a "contract[]" that fell within the scope of Section 1 because it was a "contract of adhesion," not a truly bargained-for agreement. It then, in the alternative, applied the Rule of Reason—the antitrust liability standard applicable to most cases.

At step one of the Rule of Reason, the district court found that Epic proved substantial anticompetitive harms through both direct and indirect evidence. Apple has for years charged a supracompetitive commission on App Store transactions that it set "without regard" for competition. That commission, in turn, creates an "extraordinary high" operating margin of 75% for App Store transactions. Moreover, Apple has market power in the mobile-games-transactions market, evidenced by its 52 to 57% market share and barriers to entry in the form of network effects. Apple uses that market power to prevent would-be competitors like Epic from offering app-distribution and payment-processing alternatives, reducing innovation and Apple's own investment in the App Store in the process.

At step two of the Rule of Reason, the district court found that Apple established non-pretextual, legally cognizable procompetitive rationales for its app-distribution and IAP restrictions. The district court credited Apple's rationale that its restrictions seek to enhance consumer appeal and differentiate Apple products by improving iOS security and privacy. It also *partially* accepted Apple's rationale that the restrictions are a means of being compensated for third-party developers' use of its intellectual property—crediting it generally but rejecting it

"with respect to the [App Store's] 30% commission rate specifically."

At step three of the Rule of Reason, the district court rejected Epic's proposed less restrictive alternatives (LRAs) as severely underdeveloped. As a purported LRA to Apple's app-distribution restriction, Epic primarily advanced a "notarization model" based on Apple's approach to security on the Mac operating system (macOS). On macOS, Apple does not mandate an exclusive distribution channel, as it does on iOS; nor does Apple condition distribution of an app on first submitting that app to Apple for review. But when a developer chooses to forego submitting an app to Apple, that app—regardless of how it is distributed to Mac users—will carry a warning that Apple has not scanned it for malware. Critically, the macOS notarization model does not contain a layer of human review as iOS app review does. Given this discrepancy, the district court found that such a model would not be as effective as Apple's current model in achieving Apple's security and privacy goals. It briefly considered whether Apple could close the gap by imposing a security and privacy floor on third-party app stores, but then noted that it is unclear whether doing so would comport with Epic's requested injunctive relief. In any event, the court found that Epic failed to prove the notarization model would accomplish Apple's IP-compensation rationale because Epic's requested relief "leave[s] unclear whether Apple can collect licensing fee royalties and, if so, how it would do so."

As a purported LRA for the IAP requirement, Epic proposed opening in-app payment processing to competing vendors. The district court again rejected the proposed LRA as not being as effective as Apple's current model in accomplishing its security and privacy goals. More

fundamentally, there was little in the record showing how Epic envisioned Apple accomplishing its IP-compensation goal through the proposed LRA. Because the court upheld the app-distribution restriction, Apple would still be entitled to its 30% commission on in-app purchases within apps downloaded from the App Store. On its own initiative, the district court floated the idea of Apple permitting multiple in-app payment processors while reserving a right to audit developers to ensure compliance with the 30% commission. But it quickly rejected that as an alternative because it "would seemingly impose both increased monetary and time costs."

3. Sherman Act Section 1: Tying

The district court rejected Epic's Sherman Act claim that Apple ties in-app payment processing (IAP) to app distribution (the App Store). It did so on the grounds that neither of the purported separate products were actually separate. As a result, it did not decide which liability standard—*per se* condemnation or the Rule of Reason—would govern the arrangement's lawfulness.

4. Sherman Act Section 2: Monopoly Maintenance

The district court also rejected Epic's claim that Apple monopolized the market for mobile-games transactions. Though Apple has significant market power, the court found it to be insufficiently durable given the rapidly changing nature of the market. In any event, the court reiterated its Rule of Reason analysis to hold that Apple did not maintain its power through anticompetitive conduct.

5. Unfair Competition Law

The court then applied the UCL to Apple's anti-steering provision. The court found that Epic is sufficiently injured to seek injunctive relief because Epic is a competing games distributor and would earn additional revenue but for Apple's restrictions. On the merits, the court applied the competitor-suit "tethering test" and consumer-suit "balancing test" and found the anti-steering provision to be "unfair" pursuant to both. The court concluded that Epic satisfied all the requirements for injunctive relief and the nature of Epic's injury warranted an injunction preventing Apple from enforcing the provision against any developer.

6. Breach of Contract

Turning to Apple's counter-claims, the district found Epic liable for breach of the DPLA. Epic had stipulated that the Project Liberty hotfix breached the DPLA's IAP requirement, so the only dispute was whether Epic could prove that the contract was illegal, void as against public policy, or unconscionable. The district court rejected each of these affirmative defenses.

7. Attorney Fees

Finally, the district court rejected Apple's indemnification claim, which asserted Epic was obligated to pay its attorney fees incurred in this litigation. The DPLA provides that Epic "agree[s] to indemnify and hold harmless [Apple] . . . from any and all claims, losses, liabilities, damages, taxes, expenses and costs, including without limitation, attorneys' fees and court costs . . . , incurred by [Apple] and arising from or related to" Epic's "breach of any certification, covenant, obligation, representation or warranty in [the DPLA]." Applying a principle of California

contract law requiring a clear statement before finding an indemnification clause to apply to disputes between the parties themselves, the district court construed the provision as applicable only to third-party claims.

C. Post-Trial Proceedings

Following the handing down of the district court's order, the parties timely appealed and cross-appealed. Apple also moved to stay the UCL injunction pending appeal—arguing that Epic lacked standing in light of its developer account termination and that injunctive relief was inappropriate. The district court denied the motion and a panel of our court granted it in part.

JURISDICTION AND STANDARD OF REVIEW

We have jurisdiction pursuant to 28 U.S.C. § 1291. In an appeal following a bench trial, we review the district court's factual findings for clear error and its conclusion of law *de novo*. *Oakland Bulk & Oversized Terminal, LLC v. City of Oakland*, 960 F.3d 603, 612 (9th Cir. 2020). We specify the applicable standards of review throughout our opinion.

ANALYSIS

On appeal, Epic challenges the district court's Sherman Act and breach of contract rulings. We affirm the district court's denial of antitrust liability and its corresponding rejection of Epic's illegality defense to Apple's breach of contract counter-claim. Though the district court erred as a matter of law on several issues, those errors were harmless. Independent of the district court's errors, Epic failed to establish—as a factual matter—its proposed market definition and the existence of any substantially less restrictive alternative means for Apple to accomplish the

procompetitive justifications supporting iOS's walled-garden ecosystem.

On cross-appeal, Apple challenges the district court's UCL and attorney fees rulings. We affirm in part and reverse and remand in part. The district court did not clearly err in finding that Epic was injured, err as a matter of law when applying California's flexible liability standards, or abuse its discretion when fashioning equitable relief. The district court did, however, err when it held that Apple was not entitled to attorney fees pursuant to the DPLA's indemnification provision.

I. Market Definition

We begin with Epic's appeal. Epic argues that the district court incorrectly defined the relevant market for its antitrust claims to be mobile-game transactions instead of Epic's proposed aftermarkets of iOS app distribution and iOS in-app payment solutions. Epic contends both that the district court erred as a matter of law by requiring several threshold showings before finding a single-brand market and that, once those errors are corrected, the record compels the conclusion that Epic established its single-brand markets. We agree that the district court erred in certain aspects of its market-definition analysis but conclude that those errors were harmless. Despite some threshold errors, the district court proceeded to analyze Epic's evidence pursuant to the proper legal framework and did not clearly err in rejecting Epic's proposed relevant markets. In particular, Epic failed to produce any evidence showing—as our precedent requires—that consumers are generally unaware of Apple's app-distribution and IAP restrictions when they purchase iOS devices.

A. General Market-Definition Principles

The Sherman Act contains two principal prohibitions. Section 1 targets *concerted* action, rendering unlawful "every contract, combination . . . , or conspiracy, in restraint of trade." 15 U.S.C. § 1. Section 2 targets *independent* action, making it unlawful to "monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States." *Id.* § 2; *see Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 767 (1984) ("The Sherman Act contains a 'basic distinction between concerted and independent action.'" (quoting *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 761 (1984))).[5]

There are two general categories of liability standards for Sherman Act claims. *Flaa v. Hollywood Foreign Press Ass'n*, 55 F.4th 680, 685 (9th Cir. 2022). "A small group of restraints are unreasonable *per se* because they 'always or almost always tend to restrict competition and decrease output.'" *Id.* (quoting *Ohio v. Am. Express Co.* ("*Amex*"), 138 S. Ct. 2274, 2283 (2018)). When a *per se* prohibition applies, we deem a restraint unlawful without any "elaborate study of the industry" in which it occurs. *Id.* (quoting *Texaco Inc. v. Dagher*, 547 U.S. 1, 5 (2006)). Most

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[5] This concerted/independent distinction is somewhat imprecise because Section 2 also encompasses certain concerted action—*i.e.*, "conspiring with any other person or persons" to monopolize a market. *See Dreamstime.com, LLC v. Google LLC*, 54 F.4th 1130, 1137 (9th Cir. 2022) ("Section 2 of the Sherman Act prohibits concerted and independent action that 'monopolize[s] or attempt[s] to monopolize.'"). However, because the distinction is a useful shorthand that is accurate in the mine-run of cases and used throughout the Supreme Court's and our court's decisions, we adopt it here as well.

restraints, however, are subject to the Rule of Reason: a multi-step, burden-shifting framework that "requires courts to conduct a fact-specific assessment" to determine a restraint's "actual effect" on competition. *Amex*, 138 S. Ct. at 2284 (quoting *Copperweld*, 467 U.S. at 768).

The Rule of Reason applies "essentially the same" regardless of "whether the alleged antitrust violation involves concerted anticompetitive conduct under § 1 or independent anticompetitive conduct under § 2." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020); *see also Flaa*, 55 F.4th at 685 ("Because the legal tests for sections 1 and 2 of the Sherman Act similar, we can 'review claims under each section simultaneously.'" (quoting *Qualcomm*, 969 F.3d at 991)).

In most, though not all, Rule of Reason cases, a "threshold step" is defining the relevant market in which the alleged restraint occurs. *Qualcomm*, 969 F.3d at 992; *see also Amex*, 138 S. Ct. at 2285 ("[C]ourts usually cannot properly apply the rule of reason without an accurate definition of the relevant market.").[6] Because Epic asserts

[6] Despite dicta in *Qualcomm* suggesting the contrary, we have never held that a precise market definition is an absolute requirement "in any antitrust case." *Qualcomm*, 969 F.3d at 992. We apply *per se* rules (*e.g.*, the prohibition against price-fixing) without inquiring into market power. *See, e.g.*, *Dagher*, 547 U.S. at 5 (*per se* rules require "no elaborate study of the industry"). Moreover, as the Supreme Court noted in *Amex*, it has previously applied the Rule of Reason—in its so-called "quick look" cases—without first defining the exact contours of the relevant market. 138 S. Ct. at 2285 n.7 (citing *FTC v. Ind. Fed'n of Dentists*, 476 U.S. 447 (1986), and *Catalano, Inc. v. Target Sales, Inc.*, 446 U.S. 643 (1980)); *see also* 1 Julian Von Kalinowski, Peter Sullivan & Maureen, *Antitrust Laws and Trade Regulation* § 12.01[3] (2022)

Rule of Reason claims and presented both direct and indirect evidence of Apple's market power, we begin our analysis with market definition.

The relevant market for antitrust purposes is "the area of effective competition"—*i.e.*, "the arena within which significant substitution in consumption or production occurs." *Amex*, 138 S. Ct. at 2285 (quoting Phillip E. Areeda & Herbert Hovenkamp, *Fundamentals of Antitrust Law* § 5.02 (4th ed. 2017)); *see also Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997) ("The relevant market is the field in which meaningful competition is said to exist."). A relevant market contains both a geographic component and a product or service component. *Hicks v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018).

A market comprises "any grouping of sales whose sellers, if unified by a monopolist or a hypothetical cartel" could profitably raise prices above a competitive level. *Rebel Oil Co., Inc. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). If the "sales of other producers [could] substantially constrain the price-increasing ability of the monopolist or hypothetical cartel, these other producers must be included in the market." *Id.* To conduct this inquiry, courts must determine which products have a "'reasonable interchangeability of use' or sufficient 'cross-elasticity of demand'" with each other. *Hicks*, 897 F.3d at 1120 (quoting *Brown Shoe*, 370 U.S. at 325); *see also United States v. E. I.*

("Usually, the 'quick look' does not require a detailed analysis of the relevant market and market power."); Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 1911a (4th ed. 2022) ("[D]ifferent applications of the rule of reason require different types and levels of inquiry.").

du Pont de Nemours & Co., 351 U.S. 377, 400 (1956) (emphasizing "the responsiveness of the sales of one product to price changes of [another]").

Often, this inquiry involves empirical evidence in the form of a "SSNIP" analysis. That analysis echoes *Rebel Oil* and uses past consumer-demand data and/or consumer-survey responses to determine whether a hypothetical monopolist could profitably impose a **S**mall, **S**ignificant, **N**on-transitory **I**ncrease in **P**rice above a competitive level. As we have previously summarized this analysis:

> [A]n economist proposes a narrow geographic and product market definition and then iteratively expands that definition until a hypothetical monopolist in the proposed market would be able to profitably make a small but significant non-transitory increase in price ("SSNIP"). At each step, if consumers would respond to a SSNIP by making purchases outside the proposed market definition, thereby rendering the SSNIP unprofitable, then the proposed market definition is too narrow. At the next step, the economist expands the proposed geographic or product market definition to include the substituted products or area. This process is repeated until a SSNIP in the proposed market is predicted to be profitable for the hypothetical monopolist.

Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., 20 F.4th 466, 482 n.1 (9th Cir. 2021). SSNIP analyses are relevant to

both Clayton Act merger challenges and Sherman Act restraint-of-trade or monopolization cases. *See id.* (Sherman Act section 2 monopolization claim); *Saint Alphonsus Med. Ctr.-Nampa Inc. v. St. Luke's Health Sys., Ltd.*, 778 F.3d 775, 783 (9th Cir. 2015) (Clayton Act section 7 merger challenge).[7]

Courts also consider several "practical indicia" that the Supreme Court highlighted in *Brown Shoe*: "[1] industry or public recognition of the [market] as a separate economic entity, [2] the product's peculiar characteristics and uses, [3] unique production facilities, [4] distinct customers, [5] distinct prices, [6] sensitivity to price changes, and [7] specialized vendors." *Brown Shoe*, 370 U.S. at 325; *Olin Corp. v. FTC*, 986 F.2d 1295, 1299 (9th Cir. 1993) (invoking *Brown Shoe* indicia); *see also* Areeda & Hovenkamp, *Antitrust Law*, *supra*, ⁋ 533 (describing these indicia as having "evidentiary usefulness" in determining cross-elasticity of demand).

B. Single-Brand Aftermarkets

"[I]n some instances one brand of a product can constitute a separate market." *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 482 (1992); *see also Newcal Indus., Inc. v. Ikon Office Sol.*, 513 F.3d 1038, 1048 (9th Cir.

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[7] Thus, to the extent the district court held that a SSNIP analysis applies only to merger challenges, it erred. However, because Sherman Act cases may involve markets in which a defendant has substantial market power or monopoly power (and has *already* exercised that power to charge a supracompetitive price), a SSNIP analysis in such cases "must not be used uncritically, and alternative indicia of market power should be explored." Areeda & Hovenkamp, *Antitrust Law*, *supra*, ⁋ 539. Otherwise, a court may risk a false negative: *over*-defining a market and finding no market power where, in fact, it does exist.

2008) ("[T]he law permits an antitrust claimant to restrict the relevant market to a single brand of the product at issue[.]"). More specifically, the relevant market for antitrust purposes can be an *aftermarket*—where demand for a good is entirely dependent on the prior purchase of a durable good in a *foremarket*.

In *Kodak*, the Supreme Court considered the question of whether a lack of market power in the foremarket (photocopier machines, generally) categorically precludes a finding of market power in the aftermarket (replacement parts for and servicing of Kodak-brand photocopiers), which Kodak had allegedly achieved by contractually limiting customers to Kodak-provided parts and services. 504 U.S. at 455, 466. The Supreme Court rejected Kodak's invitation to impose an across-the-board rule because it was not convinced that the rule—which "rest[ed] on a factual assumption about the cross-elasticity of demand" in aftermarkets—would always hold true. *Id.* at 470. The Supreme Court thus folded aftermarkets into the framework for assessing markets generally, evaluating cross-elasticity of demand to determine whether a hypothetical monopolist could profitably charge a supracompetitive price. *See id.* at 469 ("The extent to which one market prevents exploitation of another market depends on the extent to which consumers will change their consumption of one product to a price change in another, *i.e.*, the 'cross-elasticity of demand.'" (quoting *Du Pont*, 351 U.S. at 400)).

Explaining its skepticism of the factual assumption underlying *Kodak*'s proposed categorical rule, the Court reasoned that "significant" (1) information costs and (2) switching costs "could create a less responsive connection between aftermarket prices and [foremarket] sales," particularly where the percentage of "sophisticated

purchasers" able to accurately life-cycle price is low. *Id.* at 473, 475; *see also id.* 477 n.24 (a "crucial" element is that the aftermarket restrictions were not "generally known" by foremarket consumers). That is, these conditions might "lock-in" unknowing customers such that competition in the foremarket cannot "discipline [competition in] the aftermarkets," meaning a hypothetical monopolist could price its aftermarket products at a supracompetitive level without a substantial number of customers substituting to other products. *Id.* at 486; *see also* Von Kalinowski *et al.*, *supra*, § 24.02[5] (*Kodak* single-brand aftermarket requires "high switching costs," "high information costs," and "substantial" ability to "exploit 'ignorant' consumers"). Whether a plaintiff has proven such a lock-in must be resolved "on a case-by-case basis, focusing on the 'particular facts disclosed by the record.'" *Kodak*, 504 U.S. at 467 (quoting *Maple Flooring Mfrs. Ass'n v. United States*, 268 U.S. 563, 579 (1925)).

In *Newcal*, we considered how to square *Kodak* with our prior holding in *Forsyth* that contractual obligations are generally "not a cognizable source of market power." *Newcal*, 513 F.3d at 1047 (citing *Forsyth v. Humana, Inc.*, 114 F.3d 1467 (9th Cir. 2017)). We reasoned that the "critical distinction" between *Kodak*, on the one hand, and *Forsyth*, on the other, is that "the Kodak customers did not knowingly enter a contract that gave Kodak the exclusive right to prove parts and services for the life of the equipment." *Id.* at 1048. Put otherwise, the "simple purchase of a Kodak-brand equipment" was not "functionally equivalent to the signing of a contractual agreement" limiting aftermarket choices. *Id.*; *see also id.* at 1049 ("[T]he law permits an inquiry into whether a consumer's selection of a particular brand in the competitive

market is the functional equivalent of a contractual commitment, giving that brand an agreed-upon right to monopolize its consumers in an aftermarket.”). Kodak thus differed markedly from *Forsyth*, which involved medical-insurance policyholders who entered into insurance contracts with Humana knowing that certain hospitals would carry higher deductibles and co-payments than others. *See id.* at 1048–49.

Our knowledge-based distinction in *Newcal* flowed directly from the Supreme Court’s emphasis in *Kodak* on a defendant’s ability to use not “generally known” aftermarket restrictions to exploit unsophisticated consumers. *Kodak*, 504 U.S. at 477 n.24. And, as in *Kodak*, we made sure to emphasize that the aftermarkets inquiry does not end as soon as a plaintiff checks the *Kodak*-based boxes related to consumer knowledge, information costs, and switching costs. “Even when a submarket is an *Eastman Kodak* market, though, it must bear the ‘practical indicia’ of an independent economic entity in order to qualify as a cognizable submarket under *Brown Shoe*.” *Newcal*, 513 F.3d at 1051.

In sum, to establish a single-brand aftermarket, a plaintiff must show: (1) the challenged aftermarket restrictions are “not generally known” when consumers make their foremarket purchase; (2) “significant” information costs prevent accurate life-cycle pricing; (3) “significant” monetary or non-monetary switching costs exist; and (4) general market-definition principles regarding cross-

elasticity of demand do not undermine the proposed single-brand market.[8]

C. Standard of Review

"We review relevant market definitions as fact findings reversible only if the evidence compels a conclusion contrary to the [factfinder's] verdict." *Optronic*, 20 F.4th at 482; *see also Saint Alphonsus*, 778 F.3d at 784 (finding "no clear error" in the district court's market definition). Where a plaintiff asserts a *Kodak*-style single-brand aftermarket, it bears the burden of "rebut[ting] the economic presumption that . . . consumers make a knowing choice to restrict their aftermarket options when they decide in the initial (competitive) market to enter a[] . . . contract." *Newcal*, 513 F.3d at 1050.

D. Epic's Legal Challenges

With these principles in mind, we now turn to Epic's arguments that the district court committed legal error when it (1) held a market can never be defined around a product that the defendant does not license or sell, (2) required lack of consumer awareness to establish a *Kodak*-style market, (3) purportedly required a change in policy to establish a *Kodak*-style market, and (4) required Epic to establish the "magnitude" of switching costs. We agree with Epic on its first argument and, to the extent the district court did impose

[8] Epic and the district court interpret *Newcal* to impose a different four-part test. In doing so, they mistakenly rely on a portion of *Newcal* where we determined that the *specific* complaint before us plausibly alleged lack of consumer awareness such that it fell on the *Kodak* side of the *Kodak*/*Forsyth* divide. *See Newcal*, 513 F.3d at 1049 ("In determining whether this case is more like . . . *Forsyth* or more like *Eastman Kodak*, there are four relevant aspects of the complaint.).

a change-in-policy requirement, Epic's third argument. But we reject Epic's second and fourth arguments as squarely foreclosed by *Kodak* and *Newcal*.[9]

1. Unlicensed or Unsold Product Markets

First, the district court erred by imposing a categorical rule that an antitrust market can *never* relate to a product that is not licensed or sold—here smartphone operating systems. To begin, this categorical rule flouts the Supreme Court's instruction that courts should conduct market-definition inquiries based not on "formalistic distinctions" but on "actual market realities." *Amex*, 138 S. Ct. at 2285 (quoting *Kodak*, 504 U.S. at 466–67).

Moreover, the district court's rule is difficult to square with decisions defining a product market to include vertically integrated firms that self-provision the relevant product but make no outside sales. For example, the D.C. Circuit in *Microsoft* noted that "Apple had a not insignificant share of worldwide sales of operating systems," even though Apple did not sell or license macOS but instead only included it in its own Mac computers. *United States v.*

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[9] We also reject Apple's suggestion that Epic's antitrust claims should have automatically failed as soon as the district court adopted a market of mobile-game transactions, instead of Epic's proposed aftermarkets. None of the authorities Apple cites comes anywhere close to supporting its radical argument that, where parties offer dueling market definitions, the case immediately ends if the district court finds the record supports the defendant's proposed market (or a third in-between market, as was the case here) rather than the plaintiff's market. Instead, our precedent squarely forecloses such an argument. *See Rebel Oil*, 51 F.3d at 1421 (rejecting the plaintiff's proposed market but stating that such a rejection was "not fatal" to its claim, and remanding to determine whether the defendant possessed market power in the defendant-proposed market that the court adopted).

Microsoft Corp., 253 F.3d 34, 73 (D.C. Cir. 2001). While the *Microsoft* court ultimately excluded macOS from its market, it did so on fact-bound substitutability grounds, not the categorical grounds that the district court used here. *Id.* at 52.

Finally, the district court's rule overlooks that there may be markets where companies offer a product to one side of the market for free but profit in other ways, such as by collecting consumer data or generating ad revenue. *See, e.g.*, *FTC v. Facebook, Inc.*, 581 F. Supp. 3d 34, 44–45, 55 (D.D.C. 2022) (finding FTC plausibly alleged a market of personal social networks even though "all [are] provided free of charge" to users). It puts form over substance to say that such products cannot form a market because they are not directly licensed or sold.

2. Lack of Consumer Knowledge

Second, the district court did not err when it required Epic to produce evidence regarding a lack of consumer knowledge of Apple's app-distribution and IAP restrictions. Such a requirement comes directly from *Kodak* and *Newcal*. The former stated that it is "crucial" that aftermarket restrictions are not "generally known." *Kodak*, 504 U.S. at 477 n.24. The latter placed the burden on a plaintiff to "rebut the economic presumption that . . . consumers make a knowing choice to restrict their aftermarket options" when they make a foremarket purchase. *Newcal*, 513 F.3d at 1050.[10]

[10] As Epic correctly notes in its opening brief, *Kodak* does not impose a requirement that a plaintiff show "complete ignorance" of a defendant's aftermarket restrictions; it need only show that the restrictions are not

3. Change in Policy

Third, Epic argues that the district court erred by holding that a plaintiff can establish a *Kodak*-style aftermarket only if it shows that the defendant adopted its aftermarket restrictions *after* some portion of consumers purchased their foremarket durable goods. Had the district court actually imposed such an absolute change-in-policy requirement, it would have erred. As explained above, *Kodak* and *Newcal* require a showing of a lack of consumer awareness regarding aftermarket restrictions. *Newcal*, 513 F.3d at 1050. A change in policy is of course *one* way of doing so; a consumer cannot knowingly agree to a restriction that did not exist at the time of the foremarket transaction. But it is not the *exclusive* means of doing so. Indeed, *Kodak* itself contemplated that some sophisticated, high-volume consumers would be able to accurately life-cycle price goods in the foremarket. *Kodak*, 504 U.S. at 476. Such life-cycle pricing would be impossible if those consumers were unaware that they would be restricted to certain vendors in the aftermarket.

But contrary to Epic's assertion, we do not read the district court's order as running counter to these principles. The district court explained that "other circuits have aligned with the contours of *Newcal* . . . regarding knowledge and/or post-purchase policy changes" and that the "breadth of antitrust law" requires that a restriction "must not have been sufficiently disclosed to consumers." It then quoted the operative language from *Newcal* that focuses on lack of

"generally known." *Kodak*, 504 U.S. at 477 n.24. We need not decide what amounts to "general[]" unawareness because Epic presented *no* evidence of consumer unawareness. *See infra* section I.E.

knowledge, not the necessity of a policy change. Finally, it examined the record to find neither a change in policy nor proof that iOS device purchasers are unaware of the distribution and IAP restrictions. *See infra* section I.E. The district court appropriately treated a change in policy as one, but not the exclusive, way of establishing *Kodak* and *Newcal*'s general-lack-of-knowledge requirement.

4. Significant Switching Costs

Fourth, the district court did not err when it required Epic to produce evidence about the *magnitude* of switching costs. *Kodak* explicitly requires that switching costs—whether monetary or non-monetary—be "significant." *Kodak*, 504 U.S at 473. This showing need not be extensive; among other things, a plaintiff can point to the "heavy initial outlay" of the foremarket good and brand-specific purchases. *Id.* at 477. By requiring such a showing, the district court was simply fulfilling its *Kodak* obligation of ensuring that switching costs are "significant."[11]

E. Epic's Clear-Error Challenge

We now turn to the main thrust of Epic's market-definition argument: that it is entitled, as a factual matter, to a finding in favor of its proposed aftermarkets. Though Epic attempts to avoid the clear-error label, its argument requires it to carry the heavy of burden on appeal of showing that the district court clearly erred in finding that (1) Epic failed to show a lack of general consumer awareness regarding Apple's restrictions on iOS distribution and payment processing, (2) Epic failed to show significant switching

[11] As explained in the following section, we express no view on whether the district court erred when applying this significance requirement to Epic's proffered evidence regarding switching costs.

costs, and (3) the empirical evidence in the record and the *Brown Shoe* practical indicia support a market of mobile-game transactions, not Epic's iOS-specific aftermarkets.[12]

Beginning with the first prong, Epic had the burden of showing a lack of consumer awareness—whether through a change in policy or otherwise. Epic identified a purported change in policy, contrasting the App Store's now-immense profitability with a pre-launch statement from Steve Jobs that Apple did not "intend to make money off the App Store['s]" 30% commission. The district court reasonably found this statement to simply reflect Jobs's "initial expectation" about the App Store's performance, not an announcement of Apple policy. Especially in light of the district court's finding that Apple has "maintained the same general rules" for distribution and payment processing since the App Store's early days, it did not clearly err in concluding that Epic failed to prove a lack of consumer awareness through a change of policy.

Nor did the district court clearly err in finding that Epic otherwise failed to establish a lack of awareness. Indeed, the district court squarely found: "[T]here is *no evidence* in the record demonstrating that consumers are unaware that the App Store is the sole means of digital distribution on the iOS platform" (emphasis added). And on appeal, Epic fails to cite any evidence that would undermine the district court's characterization of the record.

Because of this failure of proof on the first prong of Epic's *Kodak*/*Newcal* showing, we need not reach—and do

[12] The district court did not rule against Epic on the remaining prong of the *Kodak*/*Newcal* test: the presence of significant information costs that make accurate life-cycle pricing difficult.

not express any view regarding—the other factual grounds on which the district court rejected Epic's single-brand markets: (1) that Epic did not show significant switching costs, and (2) that empirical evidence and the *Brown Shoe* factors rebut Epic's proposed aftermarkets.

Moreover, the district court's finding on *Kodak*/*Newcal*'s consumer-unawareness requirement renders harmless its rejection of Epic's proposed aftermarkets on the legally erroneous basis that Apple does not license or sell iOS as a standalone product. *See supra* section I.D.1. To establish its single-brand aftermarkets, Epic bore the burden of "rebut[ting] the economic presumption that . . . consumers make a knowing choice to restrict their aftermarket options when they decide in the initial (competitive) market to enter a[] . . . contract." *Newcal*, 513 F.3d at 1050. Yet the district court found that there was "no evidence in the record" that could support such a showing. As a result, Epic cannot establish its proposed aftermarkets on the record before our court—even after the district court's erroneous reasoning is corrected.

In his partial dissent, our colleague, Judge Thomas, disagrees with our conclusion that the error discussed in section I.D.1 is harmless. First, Judge Thomas contends that we lack any "direct authority for [this] proposition." While we do not have a *Kodak*-specific case to cite, treating an error as harmless in light of an independent and sufficient alternative finding is standard fare in appellate courts. *See, e.g.*, *United States v. Wright*, 46 F.4th 938, 944 (9th Cir. 2022) ("[The district court's . . . error was harmless in light of its alternative holding . . . ." (capitalization standardized)); *Tommasetti v. Astrue*, 533 F.3d 1035, 1042 (9th Cir. 2008) ("Although the ALJ's step four determination constitutes error, it is harmless error in light

of the ALJ's alternative finding at step five."); *United States v. Koenig*, 912 F.2d 1190, 1190 (9th Cir. 1990) ("We agree [with the appellant's assertion of error], but conclude that the district court made alternative rulings that render any error harmless."). Second, and relatedly, Judge Thomas argues that our harmless-error conclusion runs counter to precedent instructing that, outside of certain exceptions, "courts usually cannot apply the rule of reason without an accurate definition of the relevant market." *Amex*, 138 S. Ct. at 2285. But that argument misconstrues the effect of the district court's finding on the consumer-unawareness prong. If, as Judge Thomas requests, we were to just correct the district court's erroneous reasoning and then remand, the district court's market definition on remand would be foreordained. Given the total lack of evidence on consumer-unawareness, Epic cannot establish its proposed aftermarkets. So, contrary to the partial dissent's assertion, we do not proceed to apply the Sherman Act's liability standards without first defining a relevant market. Epic's proposed aftermarkets fail, and Apple did not cross-appeal the district court's rejection of its proposed market. The district court's middle-ground market of mobile-games transaction thus stands on appeal, and it is that market in which we assess whether Apple's conduct is unlawful pursuant to the Sherman Act.

II. Sherman Act Section 1: Unreasonable Restraint

With the relevant market for Epic's antitrust claims established (mobile-game transactions), we turn to the district court's rejection of Epic's Sherman Act Section 1 restraint-of-trade claim. Section 1 prohibits "[e]very contract, combination . . . , or conspiracy, in restraint of trade." 15 U.S.C. § 1. Courts have long read Section 1 to "outlaw only *unreasonable* restraints." *Amex*, 138 S. Ct. at

2283 (quoting *State Oil v. Khan*, 522 U.S. 3, 10 (1997)). Thus, a Section 1 inquiry has both a threshold component (whether there is a contract, combination, or conspiracy) and a merits component (whether it is unreasonable). *Qualcomm*, 969 F.3d at 988–89. While a restraint can be unreasonable *per se* or pursuant to the Rule of Reason, the parties agree that the latter standard applies here.

Epic contends that the district court (1) incorrectly found that the DPLA was not a "contract[]" within the scope of Section 1, (2) misapplied steps two and three of the Rule of Reason, and (3) omitted a fourth balancing step after it found that Epic failed to satisfy its step-three burden. Apple asserts—as an alternative basis for affirming the district court's denial of Sherman Act liability—that the court erred at step one of the Rule of Reason. We agree with Epic on its first and third arguments but find the errors to be harmless; we reject Epic's and Apple's remaining arguments.

A. Existence of a Contract

The district court erred when it held that a non-negotiated contract of adhesion like the DPLA falls outside of the scope of Section 1. That holding plainly contradicts Section 1's text, which reaches "[*e*]*very contract*, combination . . . , or conspiracy" that unreasonably restrains trade. 15 U.S.C. § 1 (emphasis added). To hold that a contract is exempt from antitrust scrutiny simply because one party "reluctant[ly]" accepted its terms "would be to read the word[] 'contract'" out of the statute. *Systemcare, Inc. v. Wang Lab'ys Corp.*, 117 F.3d 1137, 1143 (10th Cir. 1997).

Moreover, the district court's contract-of-adhesion exemption is difficult to square with numerous antitrust cases involving agreements in which one party set terms and

the other party reluctantly acquiesced. *See, e.g.*, *Amex*, 138 S. ct. at 2282 ("Amex's business model sometimes causes friction with merchants"); *Perma Life Mufflers, Inc. v. Int'l Parts Corp.*, 392 U.S. 134, 142 (1968) (the plaintiff "unwillingly complied with the restrictive . . . agreements"), *overruled on other grounds by Copperweld*, 467 U.S. 752; *Barry v. Blue Cross of Cal.*, 805 F.2d 866, 869 (9th Cir. 1986) (contract "terms and structure were made by" the defendant). Given the number of cases in which the district court's exemption would have been decisive, it is telling that the dog never barked.

Additionally, as the district court itself recognized, its holding is "not particularly consistent" with ties being cognizable pursuant to Section 1. In a classic tie, the defendant "exploit[s] . . . its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 12 (1984), *overruled on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006). "If such conduct were to be labelled 'independent,' virtually all tying arrangements would be beyond the reach of Section 1." *Image Tech. Serv., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 619 (9th Cir. 1990).

Moreover, Section 1 is primarily concerned with firms that exercise market power—*i.e.*, the "special ability . . . to force a [a contracting partner] to do something that he would not do in a competitive market." *Jefferson Parish*, 466 U.S. at 13–14. The district court's rule would preclude Section 1 suits and illegality defenses to breach of contract claims where they are most needed: when dealing with restraints

imposed by firms that have market power but lack the monopoly power that triggers Section 2 scrutiny.[13]

Thus, the district court erred on this threshold issue. But because the court, in the alternative, properly applied the Rule of Reason, its error was harmless.

B. Rule of Reason Step One: Anticompetitive Effects

The district court did not err when it found that Epic made the Rule of Reason's required step-one showing. At step one, "the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market." *Amex*, 138 S. Ct. at 2284. Antitrust plaintiffs can make their step-one showing either "directly or indirectly." *Id.*; *accord PLS.Com, LLC v. Nat'l Ass'n of Realtors*, 32 F.4th 824, 834 (9th Cir. 2022); *Aya Healthcare Servs., Inc. v. AMN Healthcare, Inc.*, 9 F.4th 1102, 1112 (9th Cir. 2021); *Rebel Oil.*, 51 F.3d at 1434.

[13] The decisions that the district court relied on are readily distinguishable. An express agreement is "direct evidence of 'concerted activity.'" *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1153 (9th Cir. 2003). But the district court relied exclusively on cases in which there was *no* direct evidence of concerted activity and a plaintiff instead produced circumstantial evidence to show that the defendants were acting in concert. *See, e.g.*, *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752 (1984). Where a plaintiff puts forward only circumstantial evidence, courts must conduct a searching inquiry, lest they mistake parallel conduct (which is legal) for concerted activity (which is subject to Section 1 scrutiny). *Id.* at 768; *see In re Musical Instruments & Equip. Antitrust Litig.*, 798 F.3d 1186, 1193–94 (9th Cir. 2015). Where there is an express contract, that concern is simply not present.

"To prove a substantial anticompetitive effect *directly*, the plaintiff must provide 'proof of actual detrimental effects [on competition],' such as reduced output, increased prices, or decreased quality in the relevant market." *PLS.Com*, 32 F.4th at 834 (emphasis added) (quoting *Amex*, 138 S. Ct. at 2284). Importantly, showing a reduction in output is one form of direct evidence, but it "is not the only measure." *O'Bannon v. NCAA*, 802 F.3d 1049, 1070 (2015) (emphasis removed) (quoting Areeda & Hovenkamp, *Antitrust Law*, supra, ⁋ 1503b(1)).

To prove substantial anticompetitive effects *indirectly*, the plaintiff must prove that the defendant has market power and present "some evidence that the challenged restraint harms competition." *Amex*, 138 S. Ct. at 2284. Market power is the ability for a defendant to profitably raise prices by restricting output. *Id.* at 2288; *see also Jefferson Parish*, 466 U.S. at 13–14 (market power is the ability "to force a purchaser to do something that he would not do in a competitive market"). In other words, a firm with market power is a price-*maker*, not the price-*takers* that economic theory expects in a competitive market. Pursuant to this indirect-evidence route, "[t]he existence of market power is a significant finding that casts an anticompetitive shadow over a party's practices in a rule-of-reason case." *Hahn v. Or. Physicians' Serv.*, 868 F.2d 1022, 1026 (9th Cir. 1988).

Market power is generally inferred from the defendant's possession of a high market share and the existence of "significant barriers to entry." *Rebel Oil*, 51 F.3d at 1434. Whether a defendant possesses market power is a factual question that we review for clear error. *Cf. L.A. Land Co. v. Brunswick Corp.*, 6 F.3d 1422, 1425 (9th Cir. 1993) (possession of monopoly power is a fact question).

A plaintiff must also present "some evidence" that the defendant uses that market power to harm competition. *Amex*, 138 S. Ct. at 2284; *see also Aya Healthcare*, 9 F.4th at 1113 (citing *Tops Mkts., Inc. v. Quality Mkts., Inc.*, 142 F.3d 90, 97 (2d Cir. 1998), for the proposition that "market power alone does not suffice as indirect evidence for a rule-of-reason analysis"). This inquiry need not always be extensive or highly technical. It is sufficient that the plaintiff prove the defendant's conduct, as matter of economic theory, harms competition—for example that it increases barriers to entry or reduces consumer choice by excluding would-be competitors that would offer differentiated products. *See N. Am. Soccer League, LLC v. U.S. Soccer Fed'n Inc.*, 883 F.3d 32, 42 (2d Cir. 2018).

Here, the district concluded that Epic produced both sufficient direct and indirect evidence to show that Apple's distribution and IAP restrictions impose substantial anticompetitive effects. In terms of direct evidence, the court found that Apple has for years extracted a supracompetitive commission that was set "almost by accident" and "without regard" to its own costs and has produced "extraordinarily high" operating margins that "have exceeded 75% for years." The court found that "the economic factors driving" other platforms' rates "do not apply equally to Apple," with "nothing other than legal action seem[ing] to motivate Apple to reconsider pricing and reduce rates." With respect to indirect evidence, the district court found that Apple has market power: Apple had a mobile-games market share of 52 to 57% for the three years in evidence, and network effects and information restrictions create barriers to entry. The court found that Apple wielded that market power to foreclose would-be competitors like Epic from offering app-distribution and payment-processing

alternatives—reducing innovation and Apple's own investment in the App Store in the process.

1. Direct Evidence

Apple challenges both the district court's direct- and indirect-evidence conclusions on several grounds—some legal, some factual. We are not persuaded that the district court erred at step one of the Rule of Reason.[14]

First, Apple argues that the district court's direct-evidence conclusion cannot stand because Epic did not show that Apple's restrictions reduced output. We squarely rejected this argument in *O'Bannon*. There, the NCAA similarly argued that liability was foreclosed because output in the relevant market "increased steadily over time." 802 F.3d at 1070. "Although output reductions are one common kind of anticompetitive effect in antitrust cases, a 'reduction in output is not the *only* measure of anticompetitive effect.'" *Id.* (citation omitted). Nor does *Amex* displace our holding in *O'Bannon*. A showing of decreased output was essential in that case because the plaintiff "failed to offer any reliable measure of Amex's transaction price or profit margins" and "the evidence about whether Amex charges more than its competitors was ultimately inconclusive." *Amex*, 138 S. Ct. at 2288.

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[14] We also reject Apple's threshold argument that the district court erred by not isolating the effects of Apple's unilateral product-design decisions from the effects of the contractual restrictions that are properly within the scope of Section 1. This argument runs counter to the record. When conducting its Rule of Reason analysis, the district court noted that Epic "appear[ed] to disclaim any challenge to Apple's code signing restrictions," so the court "consider[ed] only the DPLA restrictions."

Second, Apple argues that Epic's evidence of supracompetitive pricing fails as a matter of law because Apple never raised its commission. A supracompetitive price is simply a "price[] above competitive levels." *Rebel Oil*, 51 F.3d at 1434. Apple cites no binding precedent in support of its proposition that the charging of a supracompetitive price must always entail a price increase, though we recognize that it ordinarily does.

Third, Apple attacks the supracompetitive-pricing finding on factual grounds by asserting that Apple charges a substantially similar commission as its competitors. That assertion is true as far as *headline* rates go, but the district court reasonably based its supracompetitive-price finding on *effective* commission rates instead of headline rates. The district court found Apple's reliance on headline rates to be "suspect" because, unlike the App Store, other platforms "frequently negotiate[] down" the rates they charge developers. The court noted that Amazon has a headline rate of 30% but an effective commission rate of 18%. And it credited testimony that game-console transaction platforms often "negotiate special deals for large developers." While the district court's finding that the Google Play Store (the App Store's "main competitor") charges a 30% rate seemingly undermines the characterization of Apple's commission as supracompetitive, we cannot say that the district court clearly erred absent evidence about the Google Play Store's effective commission—the metric that the district court at trial found to be the key to determining the competitiveness of a price in this market.

Fourth, Apple argues that the district court's direct-evidence finding fails as a matter of law because *Amex* requires Epic to establish anticompetitive effects on both sides of the two-sided market for mobile-game transactions

(developers and users). Apple's argument falls short both legally and factually. We have previously held: "*Amex* does not require a plaintiff to [show] harm to participants on both sides of the market. All *Amex* held is that to establish that a practice is anticompetitive in certain two-sided markets, the plaintiff must establish an anticompetitive impact on the 'market as a whole.'" *PLS.com*, 32 F.4th at 839 (quoting *Amex*, 138 S. Ct. at 2287). In any event, the district court found that, while Apple's restrictions "certainly impact developers," there was "some evidence" that the restrictions also "impact[] consumers when those costs are passed on."

2. Indirect Evidence

We are not persuaded by Apple's argument that the district court erred in concluding that Epic failed to establish indirect evidence of anticompetitive effects. Apple does not take issue with the district court's finding of a 52 to 55% market share (other than noting it was the court's "own . . . calculation"); nor does Apple challenge the court's barriers-to-entry finding. It instead argues that the finding that Apple wields its market power in an anticompetitive manner is speculative. But, supported by basic economic presumptions, the district court reasonably found that, without Apple's restrictions, would-be competitors could offer iOS users alternatives that would differentiate themselves from the App Store on price as well as consumer-appeal features like searchability, security, privacy, and payment processing. Indeed, it found competition in the PC-gaming market to be a "vivid illustration": Steam had long charged a 30% commission, but upon Epic's entry into the market, it lowered its commission to 20%. Epic's indirect-evidence showing was sufficient. *See N. Am. Soccer League*, 883 F.3d at 42 (market power combined with a

restriction that "reduce[s] consumer choice" satisfies step one).

C. Step Two: Procompetitive Rationales

The district court correctly held that Apple offered non-pretextual, legally cognizable procompetitive rationales for its app-distribution and IAP restrictions. If a plaintiff establishes at step one that the defendant's restraints impose substantial anticompetitive effects, then the burden shifts back to the defendant to "show a procompetitive rationale for the restraint[s]." *NCAA v. Alston*, 141 S. Ct. 2141, 2160 (2021) (quoting *Amex*, 138 S. C.t at 2284). A procompetitive rationale is "a [1] nonpretextual claim that [the defendant's] conduct is [2] indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal." *Qualcomm*, 969 F.3d at 991.

Here, the district court accepted two sets of rationales as non-pretextual and legally cognizable. First, it found that Apple implemented the restrictions to improve device security and user privacy—thereby enhancing consumer appeal and differentiating iOS devices and the App Store from those products' respective competitors. Second, the court *partially* accepted Apple's argument that it implemented the restrictions to be compensated for its IP investment. While the court credited the IP-compensation rationale generally, it rejected the rationale "with respect to the 30% commission rate specifically." On appeal, Epic raises three arguments challenging Apple's rationales as legally non-cognizable.

1. Partial Acceptance of Apple's IP-Compensation Rationale

Epic argues that the district court may not credit Apple's IP-compensation rationale while finding that the rationale was pretextual "with respect to the 30% commission rate *specifically*" (emphasis added). We have held that IP-compensation is a cognizable procompetitive rationale, *Kodak*, 125 F.3d at 1219 ("desire to profit from . . . intellectual property" is presumptively procompetitive), and we find no error in the district court's *partial* crediting of that rationale here.

The district court's acceptance of the rationale generally, while rejecting a specific application of it, resembles the district court's analysis in the NCAA litigation that culminated in *Alston*, 141 S. Ct. 2141. There, the district court credited the NCAA's amateurism-as-consumer-appeal rationale but found that the NCAA's "rules and restrictions on [amateurism] ha[d] shifted markedly over time," that the NCAA adopted some restrictions "without any reference to considerations of consumer demand," and that some were "not necessary to consumer demand." *Id.* at 2163. The court did not, as Epic requests here, resolve the case at step two and hold that the NCAA's shaky proof meant it lacked *any* procompetitive rationale. Instead, the "deficiencies in the NCAA's proof of procompetitive benefits at the second step influenced the analysis at the third [step]." *Id.* at 2162. Because the NCAA's amateurism-as-consumer-appeal rationale was nebulously defined and weakly substantiated, the plaintiffs had more flexibility at step three to fashion less restrictive alternatives.

The same is true here. Because the district court accepted only a general version of Apple's IP-compensation

rationale (that Apple was entitled to "*some* compensation"), Epic at step three needed only to fashion a less-restrictive alternative calibrated to achieving that general goal, instead of one achieving the level of compensation that Apple currently achieves through its 30% commission. There is no legal requirement—as Epic suggests—that district courts make pretext findings on an all-or-nothing basis. When district courts at step two partially credit a rationale, step three will necessarily take that partial finding into account.

2. Cognizability of Apple's Privacy/Security Rationales

Epic and its *amici* next argue that Apple's security and privacy rationales are *social*, not procompetitive, rationales and therefore fall outside the purview of antitrust law. We reject this argument.

To begin, Epic waived this argument by failing to raise it below. *See Friedman v. AARP, Inc.*, 855 F.3d 1047, 1057 (9th Cir. 2017) ("Our general rule is that we do not consider an issue not passed upon below."). In the parties' pre-trial joint submission on elements and remedies, Epic agreed that "enhancing consumer appeal"—the goal of Apple's security and privacy efforts—is a cognizable procompetitive justification. At trial, one of Epic's experts conceded that "[p]rotecting iPhone users from security threats is a procompetitive benefit." And Epic made no reference to cognizability in its proposed findings of fact and conclusions of law.

Even setting aside Epic's failure to raise this argument below, we are not persuaded by it. *See Carrillo v. County of Los Angeles*, 798 F.3d 1210, 1223 (9th Cir. 2015) (courts of appeal have discretion to address pure questions of law if doing so will not prejudice the opposing party). Epic's

argument characterizes Apple as asserting security and privacy as independent justifications in and of themselves. But, throughout the record, Apple makes clear that by improving security and privacy features, it is tapping into consumer demand and differentiating its products from those of its competitors—goals that are plainly procompetitive rationales. *See*, *e.g.*, *Qualcomm*, 969 F.3d at 991 (listing enhanced "consumer appeal" as a legitimate procompetitive rationale); *O'Bannon*, 802 F.3d at 1072–73 (considering the NCAA's amateurism rationale that "plays a role in increasing consumer demand"). Consumer surveys in the record show that security and privacy is an important aspect of a device purchase for 50% to 62% of iPhone users and 76% to 89% of iPad users worldwide. Even Epic's CEO testified that he purchased an iPhone over an Android smartphone in part because it offers "better security and privacy." And the district court found that, because Apple creates a "trusted app environment, users make greater use of their devices."

With Apple's restrictions in place, users are free to decide which kind of app-transaction platform to use. Users who value security and privacy can select (by purchasing an iPhone) Apple's closed platform and pay a marginally higher price for apps. Users who place a premium on low prices can (by purchasing an Android device) select one of the several open app-transaction platforms, which provide marginally less security and privacy. Apple's restrictions create a heterogenous market for app-transaction platforms which, as a result, increases interbrand competition—the primary goal of antitrust law. *See, e.g.*, *Leegin Creative Leather Prod., Inc. v. PSKS, Inc.*, 551 U.S. 877, 895 (2007);

State Oil, 522 U.S. at 15.[15] Antitrust law assumes that competition best allocates resources by allowing firms to compete on "all elements of a bargain—quality, service, safety, and durability—and not just the immediate cost." *Nat'l Soc'y of Pro. Eng'rs v. United States*, 435 U.S. 679, 695 (1978). If we were to accept Epic and its *amici*'s argument, then no defendant could cite competing on non-price features as a procompetitive rationale.

To avoid this conclusion, Epic and its *amici* rely on a line of cases stemming from *National Society of Professional Engineers*. But neither that case nor its progeny support their argument that improved quality is a social, rather than procompetitive, rationale. Instead, the *Professional Engineers* line of cases holds that a defendant cannot severely limit interbrand competition on the theory that *competition itself* is ill-suited to a certain market or industry. *See id.* at 694–96. Epic's selection of quotes from *Professional Engineers* and other cases—without acknowledging the distinct context in which they occurred—is unconvincing.

In *Professional Engineers*, a professional association with about 12,000 engineers adopted a rule prohibiting its members from engaging in competitive bidding on

[15] Epic argues that interbrand competition in the smartphone market is irrelevant because in the app-transactions market Epic is Apple's would-be competitor—*i.e.*, the DPLA prevents interbrand competition between the App Store and the Epic Games Store in the game-transactions market. But this was also true in *Kodak*: The independent service operators were would-be competitors of Kodak in the service market. Still, the Court entertained (while ultimately rejecting on factual grounds) Kodak's procompetitive rationale that its service restrictions ensured high-quality products and thus promoted interbrand competition in the foremarket for photocopiers. *Kodak*, 504 U.S. at 482–84.

construction projects. *Id.* at 681. This "absolute ban" on competitive bidding imposed substantial anticompetitive effects, and the Society's sole justification was that competition in the construction-engineering market would lead engineers to perform "inferior work with consequent risk to safety and health." *Id.* at 692–94. In other words, competition in the construction engineering industry was not in the "public benefit." *Id.* The Supreme Court rejected this request for a judge-made exemption from the Rule of Reason, which "does not support a defense based on the assumption that competition itself is unreasonable," and stated that the Society's argument should be "addressed to Congress." *Id.* at 696.

Indiana Federation of Dentists likewise involved a request for an exemption from the Rule of Reason. There, an association of dentists, which had a nearly 100% market share in one area and a nearly 70% market share in another, adopted a rule prohibiting its members from submitting x-rays to dental insurers. *Ind. Fed. of Dentists*, 476 U.S. at 448–49. The rule made it prohibitively expensive for insurers to impose cost-containment measures and thus eliminated interbrand competition regarding cooperation with patients' insurers. *Id.* at 449. The Federation argued that competition would undermine "quality of care"—that, without the rule, consumers would make "unwise and even dangerous choices" regarding dental procedures. *Id.* at 463. The Supreme Court rejected this argument—that competition was ill-suited for the dental industry—as squarely foreclosed by *Professional Engineers*. *Id.*

Trial Lawyers Association followed a similar track, but with respect to a requested exemption from a *per se* rule. A professional association comprising about 90% of "regulars" appointed for indigent criminal defense in the Superior Court

of the District of Columbia entered into a group boycott against the District until it "substantially increase[d]" hourly rates. *FTC v. Sup. Ct. Trial Lawyers' Ass'n*, 493 U.S. 411, 416 (1990). The Association argued that its actions were not unlawful because the District had a "constitutional duty" to provide adequate representation to indigent defendants, which required it to provide meaningful compensation to their attorneys. *Id.* at 423. The Court refused to exempt the Association's conduct from the normal application of antitrust's *per se* prohibition on group boycotts, concluding that "[t]he social justifications proffered for respondents' restraint of trade . . . do not make it any less unlawful." *Id.* at 424.

The Supreme Court followed suit last term in *Alston* when it rejected the NCAA's sweeping plea for leniency. The NCAA argued that something more deferential than the Rule of Reason should apply to its restrictions on student-athlete compensation because the NCAA's amateurism restrictions advance the "societally important non-commercial objective of higher education." *Alston*, 141 S. Ct. at 2158. The Supreme Court held that this argument—that the NCAA "should be exempt from the usual operation of the antitrust laws"—should be directed to Congress, not a court. *Id.* at 2160.

Apple's rationales categorically differ from those asserted in the above cases. Apple did not agree with other app-transaction platforms (*e.g.*, the Google Play Store) to eliminate *interbrand* competition and then invoke security and privacy to avoid the "normal operation" of the Rule of Reason. *Id.* at 2147. Rather, Apple imposed *intrabrand* limitations (that iOS devices use Apple distribution and payment-processing channels) and contends that these restrictions tap into consumer demand for a private and

secure user experience and distinguish the App Store from its open-platform competitors.

3. Cognizability of Cross-Market Rationales

Epic finally argues that, even if Apple's security and privacy restrictions are procompetitive, they increase competition in a *different market* than the district court defined and in which Epic showed step-one anticompetitive effects, and thus are not legally cognizable at step two. In Epic's view, Apple's rationales relate to the market for smartphone operating systems (or the market for smartphones), while the anticompetitive effects of Apple's restrictions impact the market for mobile-game transactions.

The Supreme Court's precedent on this issue is not clear. While *amici* argued in *Alston* that cross-market justifications fail as a matter of law, the Supreme Court "express[ed] no view[]" on the argument. 141 S. Ct. at 2155. Dicta from one a *per se* decision provides some support for Epic's position. *See United States v. Topco Assocs., Inc.*, 405 U.S. 596, 609–10 (1972) (courts are unable "to weigh, in any meaningful sense, destruction of competition in one sector of the economy against promotion of competition in another sector"). But the Supreme Court has considered cross-market rationales in Rule of Reason and monopolization cases. *See Kodak*, 504 U.S. at 482–84 (relevant market of Kodak-brand service and parts; procompetitive rationale in market for photocopiers); *NCAA v. Bd. of Regents of Univ. of Okla.*, 468 U.S. 85, 104–08, 115–17 (1984) (relevant market of college football television; procompetitive rationale of protecting the market for college football tickets). Our court's precedent is similar. While we have never expressly confronted this issue, we have previously considered cross-market rationales when applying the Rule

of Reason. *See O'Bannon*, 802 F.3d at 1069–73; I*n re NCAA Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1266–71 (9th Cir. 2020) (M. Smith, J., concurring).

We decline to decide this issue here. Like Epic's general cognizability argument, Epic did not raise this argument below. Nor did it raise this argument in its opening brief before our court, denying Apple an opportunity to respond. *See Miller v. Fairchild Indus., Inc.*, 797 F.2d 727, 738 (9th Cir. 1986).

More importantly, we need not decide this issue because Epic's argument rests on an incorrect reading of the record. Contrary to Epic's contention, Apple's procompetitive justifications *do* relate to the app-transactions market. Because use of the App Store requires an iOS device, there are two ways of increasing App Store output: (1) increasing the *total* number of iOS device users, and (2) increasing the *average* number of downloads and in-app purchases made by iOS device users. Below, the district court found that a large portion of consumers factored security and privacy into their decision to purchase an iOS device—increasing total iOS device users. It also found that Apple's security- and privacy-related restrictions "provide[] a safe and trusted user experience on iOS, which encourages both users and developers to transact freely"—increasing the per-user average number of app transactions.

D. Step Three: Substantially Less Restrictive Means

The district court did not clearly err when it held that Epic failed to prove the existence of substantially less restrictive alternatives (LRAs) to achieve Apple's procompetitive rationales. At step three of the Rule of Reason, "the burden shifts back to the plaintiff to demonstrate that the procompetitive efficiencies could be

reasonably achieved through less anticompetitive means." *Alston*, 141 S Ct. at 2160 (quoting *Amex*, 138 S. Ct. at 2284). When evaluating proposed alternative means, courts "must give wide berth to [defendants'] business judgments" and "must resist the temptation to require that enterprises employ the least restrictive means of achieving their legitimate business objectives." *Id.* at 2163, 2166; *see also id.* at 2161 ("[A]ntitrust law does not require businesses to use anything like the least restrictive means of achieving legitimate business purposes."). As such, this circuit's test—which the Supreme Court approved in *Alston*—requires a "*substantially* less restrictive" alternative. *O'Bannon*, 802 F.3d at 1070 (emphasis added) (quoting *Tanaka v. Univ. of S. Cal.*, 252 F.3d 1059, 1063 (9th Cir. 2001)). To qualify as "substantially less restrictive," an alternative means "must be 'virtually as effective' in serving the [defendant's] procompetitive purposes . . . without significantly increased cost." *Id.* at 1074 (quoting *County of Tuolumne v. Sonora Cmty. Hosp.*, 236 F.3d 1148, 1159 (9th Cir. 2001)).

Because LRAs inform the injunctive relief that a district court may enter if a plaintiff prevails, courts must also keep in mind "a healthy respect for the practical limits of judicial administration" when evaluating proposed LRAs. *Alston*, 141 S. Ct. at 2163. Courts should not "impose a duty . . . that it cannot explain or adequately and reasonably supervise." *Id.* (quoting *Verizon Commc'ns Inc. v. L. Offs. Of Curtis V. Trinko, LLP*, 540 U.S. 398, 415 (2004)).

We review a district court's findings on the existence of substantially less restrictive means for clear error. *See, e.g.*, *NCAA Antitrust Litig.*, 958 F.3d at 1260; *O'Bannon*, 802 F.3d at 1074. This includes both the "virtually as effective" and "significantly increased cost" components encompassed in that finding. *See NCAA Antitrust Litig.*, 958 F.3d. at 1260.

1. Proposed LRA to the Distribution Restriction

Epic argues that Apple already has an LRA at its disposal for the distribution restriction: the "notarization model" that Apple uses for app distribution on its desktop and laptop operating system (macOS).[16] The notarization model sits somewhere between iOS's "walled garden" and the open-platform model that characterizes some app-transaction platforms. Unlike on iOS, the Mac Store (the Apple-run equivalent of the iOS App Store for Mac computers) is *not* the exclusive means for macOS users to download apps; instead, users can download apps from the Mac Store or anywhere else on the internet. Also unlike on iOS, a developer can distribute a macOS app to users without first submitting it to Apple. But, regardless of how the developer distributes that app, it will carry a warning that Apple has not scanned it for malware. The developer, however, can choose to submit the app to Apple. If the app passes Apple's malware scan, then the developer can distribute the app to users—again, through the Mac Store or otherwise—without the warning that accompanies unscanned apps.

The malware scanning that Apple performs in the notarization model is not the same as the full app review that it conducts on iOS apps. Importantly, the notarization model does not include *human* review—a contextual review that, as found by the district court, cannot currently be automated. As part of iOS human review, a reviewer confirms that an app corresponds to its marketing description to weed out "Trojan Horse" apps or "social engineering" attacks that

[16] In the district court, Epic also proposed the "enterprise model" (which Apple already implements for some iOS apps), but Epic does not advance that model on appeal as a proposed LRA.

trick users into downloading by posing as something they are not. The reviewer also checks that the app's entitlements are reasonable for its purpose—rejecting, for example, a Tic-Tac-Toe game that asks for camera access and health data, while approving camera access for a social media app. On occasion, human review also detects novel, well-disguised malware attacks. Despite Epic carrying the burden at step three of the Rule of Reason, it was not clear before the district court—and still is not entirely clear—how Epic proposes that the notarization model translates from macOS to iOS. In particular, it is unclear whether the proposed model would incorporate human review and what type (if any) of licensing scheme Apple could implement to complement the notarization model.[17] Whatever the precise form of Epic's proposed notarization model, the district court did not err in rejecting it.

First, to the extent Epic argues that Apple could jot-for-jot adopt macOS's notarization model without adding human review, Epic failed to establish that this model would be "virtually as effective" in accomplishing Apple's procompetitive rationales of enhancing consumer appeal and distinguishing the App Store from competitor app-transaction platforms by improving user security and privacy. *See O'Bannon*, 802 F.3d at1073. The district court

[17] There is even some discrepancy between the injunctive relief Epic requests and the basic mechanics of the notarization system. As explained, the notarization model labels unscanned apps with a warning. Yet Epic requested an injunction that would prohibit Apple from in any way "impeding or deterring the distribution of iOS apps" through non-App Store "distribution channel[s]." A malware warning would seemingly steer some consumers back to the App Store—raising some question of whether it would violate the "impeding or deterring" prohibition.

ultimately found that the record contained "some evidence" that macOS computers experience higher malware rates than iOS devices. It also noted a third-party report that Android devices have higher malware rates than iOS ones due to Trojan Horse apps being distributed through open app-transaction platforms. And it credited Apple's anecdotal evidence that human review sometimes detects novel malware attacks that slip through malware scans. Moreover, the district court found "compelling" Apple's explanation of why human review is necessary "against certain types of attacks." And it found that "Epic Games did not explain how, if at all" a purely automated process could screen for such threats. It also noted that Epic's security expert testified that he did not consider fraud-prevention in his security analysis, that his opinion on the value-added of human app review "may change" if he did, and that automated protections "do not protect users against" social-engineering threats. Based on this record, the district court did not clearly err in finding that a process without human app review would not be "virtually as effective" as Apple's current model.

Second, to the extent Epic proposes a notarization model that incorporates human app review, Epic failed to develop how Apple could be compensated in such a model for third-party developers' use of its IP. Epic argues that "app review can be relatively independent on app distribution" and envisions a model in which a developer would submit an app, Apple would review it, and then "send it back to the developer to be distributed directly or in another store." For example, Epic could submit a gaming app to Apple; Apple would scan it for malware and subject it to human review; and then Epic could choose to distribute it through the App Store, the Epic Games Store, or both.

While such a model would clearly be "virtually as effective" in achieving Apple's security and privacy rationales (it contains all elements of Apple's current model), Epic simply failed to develop how such a model would allow Apple to be compensated for developers' use of its IP. At closing argument, the district court asked Epic whether its requested injunctive relief would allow Apple to impose some sort of licensing fee. Epic responded that "Apple can charge," but it offered no concrete guidance on how to do so. Instead, Epic stated only that Apple "could charge certain developers more than others based on the advantage that they take of the platform" and that it "expect[s], given the innovation in Cupertino, that [Apple] would find ways to profit from their intellectual property and other contributions." The district court accordingly found that Epic's proposed distribution LRAs "leave unclear whether Apple can collect licensing royalties and, if so, how it would do so" and thus declined to consider them as "not sufficiently developed."

On appeal, Epic attempts to transfigure into an LRA the district court's off-hand statement noting the absence of "evidence that Apple could *not* create a tiered licensing scheme[,] which would better correlate the value of its intellectual property to the various levels of use by developers." It is, however, Epic's burden at step three to prove that a tiered licensing scheme (or some other payment mechanism) *could* achieve Apple's IP-compensation rationale. Without any evidence in the record of what this tiered licensing scheme would look like, we cannot say that it would be "virtually as effective" without "significantly increased cost." *O'Bannon*, 802 F.3d at 1074. Nor can we even "explain" it, let alone direct the district court to craft an

injunction that it could "adequately and reasonably supervise." *Alston*, 141 S. Ct. at 2163.

2. Proposed LRA to the IAP Requirement

Epic proposes access to competing payment processors as an LRA to Apple's IAP requirement. Like the distribution requirement LRA, this LRA suffers from a failure of proof on how it would achieve Apple's IP-compensation rationale.[18] As the district court noted, in a world where Apple maintains its distribution restriction but payment processing is opened up, Apple would still be contractually entitled to its 30% commission on in-app purchasers. Apart from any argument by Epic, the district court "presume[d]" that Apple could "utilize[e] a contractual right to audit developers . . . to ensure compliance with its commissions." But the court then rejected such audits as an LRA because they "would seemingly impose both increased monetary and time costs."

E. Step Four: Balancing

Epic—along with several *amici*, including the United States and thirty-four state attorneys general—argue that the district court erred by not proceeding to a fourth, totality-of-the-circumstances step in the Rule of Reason and balancing

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[18] As Epic argues, the district court's ultimate conclusion on the security rationale (that opening up payment processing would undermine Apple's "competitive advantage on security issues") seems difficult to square with several of the court's antecedent factual findings (*e.g.*, that "Apple has not show how its [IAP] process is any different" and that "any potential for fraud prevention [through IAP] is not put into practice"). Because Epic's LRA fails on the IP-compensation aspect, we need not decide whether the district court clearly erred when it also rejected the LRA for not being virtually as effective in accomplishing Apple's security and privacy rationales.

the anticompetitive effects of Apple's conduct against its procompetitive benefits. We hold that our precedent requires a court to proceed to this fourth step where, like here, the plaintiff fails to carry its step-three burden of establishing viable less restrictive alternatives. However, the district court's failure to expressly do so was harmless in this case.

We have been inconsistent in how we describe the Rule of Reason. Some decisions, when describing the Rule of Reason, contemplate a fourth step. *See, e.g., Qualcomm*, 969 F.3d at 991; *County of Tuolumne*, 236 F.3d at 1160. Others do not. *See, e.g.*, *NCAA Antitrust Litig.,* 958 F.3d at 1263; *Tanaka*, 252 F.3d at 1063. Because of the paucity of cases that survive step one (let alone require a court to exhaust the three agreed-upon steps), most of our decisions have not required us to actually proceed to the portion of the analysis where Epic and its *amici* argue balancing would occur.[19]

The exception is *County of Tuolumne*, which provides the most on-point guidance regarding the existence of a fourth step. There, we held: "Because plaintiffs have failed to meet their burden of advancing viable less restrictive alternatives, we reach the balancing stage. We must balance the harms and benefits of the [challenged restrictions] to determine whether they are reasonable." 236 F.3d at 1160 (citation omitted). We then concluded, with just one sentence of analysis, that "any anticompetitive harm is offset

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[19] In *Alston*, the Supreme Court cited an amicus brief reporting that courts have decided 90% of Rule of Reason cases since 1977 at step one. 141 S. Ct. at 2160–61. A similar *amicus* brief filed in this case echoes this statistic and reports that the figure rises to 97% when considering only post-1999 cases.

by the procompetitive effects of [defendant's] effort to maintain the quality of patient care that it provides." *Id.*

Supreme Court precedent neither requires a fourth step nor disavows it. In the Court's two most recent Rule of Reason decisions, it discussed only the three agreed-upon steps. *See Alston*, 141 S. Ct. at 2160; *Amex*, 138 S. Ct. at 2284. But the Court did not characterize that test as the *exclusive* expression of the Rule of Reason. *Alston* stated that the Court "has *sometimes* spoken of 'a three-step, burden-shifting framework,'" emphasized that those "steps do not represent a rote checklist" or "an inflexible substitute for careful analysis," and approvingly cited one of the Areeda and Hovenkamp treatises as using a "slightly different 'decisional model.'" 141 S. Ct. at 2160 (emphasis added).

We are skeptical of the wisdom of superimposing a totality-of-the-circumstances balancing step onto a three-part test that is already intended to assess a restraint's overall effect. Neither Epic nor any *amicus* has articulated what this balancing really entails in a given case. Epic argues only that the district court must "weigh[]" anticompetitive harms against procompetitive benefits, and the United States describes step four as a "qualitative assessment of whether the harms or benefits predominate." Nor is it evident what value a balancing step adds. Several *amici* suggest that balancing is needed to pick out restrictions that have significant anticompetitive effects but only minimal procompetitive benefits. But the three-step framework is already designed to identify such an imbalance: A court is likely to find the purported benefits pretextual at step two, or step-three review will likely reveal the existence of viable LRAs. We are thus "wary about [this] invitation[] to 'set sail on a sea of doubt.'" *Alston*, 141 S. Ct. at 2166 (quoting

United States v. Addyston Pipe & Steel Co., 85 F. 271, 284 (6th Cir. 1898) (Taft, J.)).

Nonetheless, we are bound by *County of Tuolumne* and mindful of *Alston*'s warning that the first three steps of the Rule of Reason are not a "rote checklist." Therefore, where a plaintiff's case comes up short at step three, the district court must proceed to step four and balance the restriction's anticompetitive harms against its procompetitive benefits. In most instances, this will require nothing more than—as in *County of Tuolumne*—briefly confirming the result suggested by a step-three failure: that a business practice without a less restrictive alternative is not, on balance, anticompetitive. But the Sherman Act is a flexible statute that has and will continue to evolve to meet our country's changing economy, so we will not "embarrass the future" by suggesting that will always be the case. *Nw. Airlines, Inc. v. Minnesota*, 322 U.S. 292, 300 (1944).

Turning to the record here, the district court's failure to explicitly reach the fourth step was harmless. Even though it did not expressly reference step four, it stated that it "carefully considered the evidence in the record and . . . determined, based on the rule of reason," that the distribution and IAP restrictions "have procompetitive effects that *offset* their anticompetitive effects" (emphasis added). This analysis satisfied the court's obligation pursuant to *County of Tuolumne*, and the court's failure to expressly give this analysis a step-four label was harmless.

III. Sherman Act Section 1: Tying

In addition to its general restraint-of-trade claim, Epic brought a Section 1 claim asserting that Apple unlawfully tied together app distribution (the App Store) and in-app payment processing (IAP). On appeal, Epic argues that (1)

the district court clearly erred when it found that Epic did not identify separate products, and (2) we can enter judgment in its favor because the tie is unlawful, either *per se* or pursuant to the Rule of Reason. We agree with Epic that the district court clearly erred in its separate-products finding, but we find that error to be harmless. The Rule of Reason applies to the tie involved here, and, for the reasons already explained, Epic failed to establish that Apple's design of the iOS ecosystem—which ties the App Store and IAP together—is anticompetitive.

A. Existence of a Tie

"A tying arrangement is 'an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier.'" *Kodak*, 504 U.S. at 461 (quoting *N. Pac. R. Co. v. United States*, 356 U.S. 1, 5–6 (1958)). To prove the existence of a tie, a party must make two showings.

First, the arrangement must, of course, involve two (or more) separate products. Pursuant to *Jefferson Parish* and *Kodak*, we apply a consumer-demand test when conducting this inquiry: To constitute two separate products, "[t]here must be sufficient consumer demand so that it is efficient for a firm to provide" the products separately. *Kodak*, 504 U.S. at 462 (citing *Jefferson Parish*, 466 U.S. at 21–22). Importantly, the separate-products inquiry "turns not on the functional relation between them, but rather on the character of the demand for the two items." *Jefferson Parish*, 466 U.S. at 19 & n.30. This consumer-demand test, in turn, has two parts: (1) that it is possible to separate the products, and (2) that it is efficient to do so, as inferred from circumstantial

evidence. *See* Areeda & Hovenkamp, *Antitrust Law*, *supra*, ⁋⁋ 1743–45.

The efficiency showing does not require a full-blown economic analysis. Because the showing is just a threshold step to reaching the merits of a tie (including, sometimes, the application of a *per se* rule), it would be incongruous to require a resource-intensive showing. *See N. Pac. R. Co.*, 356 U.S. at 5 (*per se* rules are meant to "avoid[] the necessity for an incredibly complicated and prolonged economic investigation"). Accordingly, the existence of separate products is inferred from "more readily observed facts." Areeda & Hovenkamp, *Antitrust Law*, *supra*, ⁋ 1745c. These include consumer requests to offer the products separately, disentangling of the products by competitors, analogous practices in related markets, and the defendant's historical practice. *See Jefferson Parish*, 466 U.S. at 22 (noting that patients and surgeons "often request specific anesthesiologists [the tied service] to come to a hospital [the tying service]" and "other hospitals often permit anesthesiologic services to be purchased separately"); *Kodak*, 504 U.S. at 463 (finding sufficient at the 12(b)(6) stage allegations that "consumers would purchase service without parts" and that the defendant had sold them "separately in the past").

Second, even where a transaction involves separate products, it is not necessarily a tie; the seller must also "*force* the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." *Jefferson Parish*, 466 U.S. at 12. Were a buyer merely to agree "to buy [a] second product on its own merits" absent any coercion, there would be no tie. Areeda & Hovenkamp, *Antirust Law*, *supra*, ⁋ 1752.

We review a finding that no tie occurred for clear error. *Krehl v. Baskin-Robbins Ice Cream Co.*, 664 F.2d 1348, 1354 (9th Cir. 1982) (reviewing separate-products finding for clear error); *Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1346 (9th Cir. 1987) (treating coercion as a fact question).

Here, the district court found that there was no tie because app distribution and IAP are not separate products. It based this finding on four rationales—each of which is either clearly erroneous or incorrect as a matter of law.

To begin, the district court erred as a matter of law when it concluded that IAP was not separate from app distribution because IAP is "integrated into . . . iOS devices." *Jefferson Parish* expressly rejects an approach to the separate-products inquiry based on the "functional relation" between two purported products. 466 U.S. at 19.

Next, the district court clearly erred when it found that "Epic Games presented no evidence showing that demand exists for IAP as a standalone product." Here, the App Store and IAP clearly can be separated because Apple *already does* so in certain contexts, namely that IAP is not required for in-app purchases of physical goods. The efficiency showing is also met. Epic produced evidence that it, Facebook, Microsoft, Spotify, Match, and Netflix, have all tried to convince Apple to let them develop their own in-app payment solutions. The Epic Games Store—a direct competitor of Apple in the mobile-games submarket—delinks distribution from payment processing. And prior to IAP's development in 2009, Apple distributed apps through the App Store but permitted developers to use their own in-app payment systems.

Relatedly, the district court clearly erred when it reasoned that, even if Apple did not require IAP, Apple would still be entitled to collect a commission on payments made and, therefore, "no economically rational developer would choose to use the alternative [payment] processor." The district court itself found that "Epic Games raises legitimate concerns" about the non-price features of IAP, including that: "Apple does a poor job of mediating disputes between a developer and its customers"; that Apple's one-size-fits-all refund approach "leads to poor [customer] experiences"; and that IAP's exclusion of developers from transactions "can also increase fraud."

Finally, the district court erred as a matter of law when it concluded that a product in a two-sided market can *never* be broken into multiple products. Despite Apple's strained effort to portray this as a factual finding, the district court imposed a bright-line legal rule. But *Amex* simply does not stand for the proposition that any two-sided platform will necessarily relate only to one market. Instead, it emphasized that market definition must "reflect[] commercial realities." 138 S. Ct. at 2285. Indeed, if *Amex* truly required a one-platform, one-market rule, then the district court's market definition—mobile gaming transactions, instead of *all* app transactions—would be erroneous, despite the court's extensive findings that game and non-game apps are characterized by significantly different demand.[20]

[20] We also reject Apple's argument that that there is no tie because "thousands of developers . . . offer no in-app purchase[s]." True, a classic tie is: "I will sell you X widgets only if you buy Y bolts from me." Here, the DPLA essentially provides: "Apple will sell you app-distribution transactions only if you buy your in-app-purchase-

B. Lawfulness of the Tie

A tie can be unlawful pursuant to either a modified *per se* rule or the Rule of Reason. A tie is *per se* unlawful if (1) the defendant has market power in the tying product market, and (2) the "tying arrangement affects a 'not insubstantial volume of commerce' in the tied product market." *Blough v. Holland Realty, Inc*, 574 F.3d 1084, 1089 (9th Cir. 2009) (quoting *Cascade Health Solutions v. PeaceHealth*, 515 F.3d 883, 912–13 (9th Cir. 2008)). The first prong requires the market-power inquiry standard throughout antitrust law. The second prong requires only that the tie affect an amount of commerce in the tied product market that is not "*de minimis*." *Datagate, Inc. v. Hewlett-Packard Co.*, 60 F.3d 1421, 1426 (9th Cir. 1995). These requirements are met here: Apple has market power in the app-distribution market. And the tie affects a non "de minimis" amount of commerce in the in-app-payment-processing market: Apple requires IAP to be used for more than half of the transactions that comprise a $100 billion market.

Nonetheless, we join the D.C. Circuit in holding that *per se* condemnation is inappropriate for ties "involv[ing] software that serves as a platform for third-party applications." *Microsoft*, 253 F.3d at 89. "It is only after considerable experience with certain business relationships that courts classify them as *per se* violations." *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 9 (1979) (quoting *Topco Assocs.*, 405 U.S. at 606). That is

processing *requirements* from Apple." Substituting a requirements term for a quantity term does not change the nature of the agreement. *See Kodak*, 504 U.S. at 461 (ties include agreement[s] "to sell one product but only on the condition that the buyer . . . not purchase that product from any other supplier" (citation omitted)).

because *per se* condemnation embodies a judicial assessment that a category of restraints is "plainly anticompetitive" and "lack[ing] . . . [in] any redeeming virtue" such that it can be "conclusively presumed illegal." *Id.* at 7–8 (citations omitted). Given the costs of improperly condemning a practice across the board, extending a *per se* rule requires caution and judicial humility. *See White Motor Co. v. United States*, 372 U.S. 253, 263 (1963) ("We need to know more than we do about the actual impact of these arrangements on competition to decide whether they . . . should be classified as per se violations of the Sherman Act."); *Microsoft*, 253 F.3d at 94 ("We do not have enough empirical evidence regarding the effect of [the] practice . . . to exercise sensible judgment regarding that entire class of behavior."). Based on the record, we do not have the level of confidence needed to universally condemn ties related to app-transaction platforms that combine multiple functionalities. *See Microsoft*, 253 F.3d at 93 ("[B]ecause of the pervasively innovative character of platform software markets, tying in such markets may produce efficiencies that courts have not previously encountered and thus the Supreme Court had not factored into the per se rule as originally conceived.").

The tie in this case differs markedly from those the Supreme Court considered in *Jefferson Parish* and prior tying cases. Particularly, "[i]n none of these cases was the tied good . . . technologically integrated with the tying good." *Microsoft*, 253 F.3d at 90. Moreover, none of the ties presented any purported procompetitive benefits that could not be achieved by adopting quality standards for third-party suppliers of the tied good, as Apple does here. *Id.*; *see also Int'l Salt Co. v. United States*, 332 U.S. 392, 398 (1947) (noting purported benefit can be achieved by

implementing quality control for machine consumables), *abrogated on other grounds by Ill. Tool*, 547 U.S. 28; *Int'l Bus. Machs. Corp. v. United States*, 298 U.S. 131, 139 (1936) (same).

Moreover, while *Jefferson Parish*'s separate-products test filters out procompetitive bundles from *per se* scrutiny in traditional markets, we are skeptical that it does so in the market involved here. Software markets are highly innovative and feature short product lifetimes—with a constant process of bundling, unbundling, and rebundling of various functions. In such a market, any first-mover product risks being labeled a tie pursuant to the separate-products test. *See Microsoft*, 253 F.3d at 92. If *per se* condemnation were to follow, we could remove would-be popular products from the market—dampening innovation and undermining the very competitive process that antitrust law is meant to protect. The Rule of Reason guards against that risk by "afford[ing] the first mover an opportunity to demonstrate that an efficiency gain from its 'tie' adequately offsets any distortion of consumer choice." *Id.*

Applying the Rule of Reason to the tie involved here, it is clearly lawful. Epic's tying claim (that app distribution and payment processing are tied together) is simply a repackaging of its generic Section 1 claim (that the conditions under which Apple offers its app-transactions product are unreasonable). For the reasons we explained above, Epic failed to carry its burden of proving that Apple's structure of the iOS ecosystem is unreasonable. *See supra* section II.

IV. Sherman Act Section 2: Monopoly Maintenance

We now consider Epic's Sherman Act Section 2 claim that Apple unlawfully maintained a monopoly. Section 2

makes it unlawful to "monopolize, or attempt to monopolize, or combine or conspire . . . to monopolize" a market. 15 U.S.C. § 2. A Section 2 monopolization claim "has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident." *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966); *accord Qualcomm*, 969 F.3d at 990; *Microsoft*, 253 F.3d at 50.

At step one, the plaintiff must establish that the defendant possesses monopoly power, which is the substantial ability "to control prices or exclude competition." *Grinnell*, 384 U.S. at 571; *accord United States v. Syufy Enters.*, 903 F.2d 659, 664 (9th Cir. 1990). Monopoly power differs in degree from market power, requiring "something greater." *Kodak*, 504 U.S. at 481; *see also* Areeda & Hovenkamp, *Antitrust Law*, *supra*, ¶ 600b (market power and monopoly power exist along a spectrum). Like market power, monopoly power can be established either directly or indirectly. *Rebel Oil*, 51 F.3d at 1434; *see Microsoft*, 253 F.3d at 51.

At step two, the plaintiff must show that the defendant acquired or maintained its monopoly through "anticompetitive conduct." *Trinko*, 540 U.S. at 407. This anticompetitive-conduct requirement is "essentially the same" as the Rule of Reason inquiry applicable to Section 1 claims. *Qualcomm*, 969 F.3d at 991; *see also Microsoft*, 253 F.3d at 59 ("[I]t is clear . . . that the analysis under section 2 is similar to that under section 1 regardless whether the rule of reason label is applied." (citation omitted)). Where, like here, the plaintiff challenges the same conduct pursuant to Sections 1 and 2, we can "review claims under each section

simultaneously." *Qualcomm*, 969 F.3d at 991. And if "a court finds that the conduct in question is not anticompetitive under § 1, the court need not separately analyze the conduct under § 2." *Id.*

At step one in this case, the district court found that although Apple possesses "considerable" market power in the market for mobile-game transactions, that power is not durable enough to constitute monopoly power given the influx nature of the market. It then, at step two, echoed its Rule of Reason conclusion that Epic failed to establish Apple's restrictions were anticompetitive.

We affirm the district court's rejection of Section 2 liability. Epic does not argue on appeal that the district court clearly erred in finding that Apple lacks monopoly power in the mobile-games market. It argues only that the district court erred in rejecting its single-brand markets in which Apple would have a 100% market share—an argument we reject above. *See supra* section I. Moreover, even assuming Apple has monopoly power, Epic failed to prove Apple's conduct was anticompetitive. *See supra* sections II–III.

V. Breach of Contract

Apple counter-sued Epic for breach of contract. Epic stipulated that it breached the DPLA when it implemented the *Fortnite* hotfix, which allowed it to process in-game transactions in violation of Apple's IAP restriction. Epic raised several affirmative defenses, however, and argued that the DPLA is illegal, void as against public policy, and

unconscionable. The district court rejected each defense, and Epic now challenges the illegality holding on appeal.[21]

The parties agree that Epic's illegality defense rises and falls with its Sherman Act claims. Because we affirm the district court's holding that Epic failed to prove Apple's liability pursuant to the Sherman Act, we also affirm its rejection of Epic's illegality defenses.

VI. California's Unfair Competition Law

We now turn to Apple's cross-appeal, beginning with its arguments concerning the UCL. The district court found that Epic suffered an injury sufficient to confer Article III standing, concluded that Apple's anti-steering provision violates the UCL's unfair prong, and entered an injunction prohibiting Apple from enforcing the anti-steering provision against any developer. Apple challenges each aspect on appeal. We affirm.

A. Standing

Article III limits federal courts' jurisdiction to "[c]ases" and "[c]ontroversies." U.S. Const. art. III, § 2. "One

[21] In its briefs, Epic also asserts that the district court erred in ruling that the DPLA was neither void-against-public-policy nor unconscionable, but the only substantive argument it makes is that the DPLA violates the Sherman Act. These doctrines, however, do not sound in express illegality. *See* Cal. Civ. Code § 1667(2) (a contract is void if it is "contrary to the policy of express law, though not expressly prohibited"); *Lhotka v. Geographic Expeditions, Inc.*, 181 Cal. App. 4th 816, 821, 824 (2010) (a contract is unconscionable if there is a disparity in bargaining power and the contract "reallocates risks in an objectively unreasonable or unexpected manner"). As such, Epic's invocation of these doctrines without any relevant argument is insufficient to raise them on appeal. *See Singh v. Am. Honda Fin. Corp.*, 925 F.3d 1053, 1075 n.22 (9th Cir. 2019).

essential aspect of this [limitation] is that any person invoking the power of a federal court must demonstrate standing to do so." *Va. House of Delegates v. Bethune-Hill*, 139 S. Ct. 1945, 1950 (2019) (quoting *Hollingsworth v. Perry*, 570 U.S. 693, 704 (2013)). Constitutional standing requires a showing of: "(1) a concrete and particularized injury, that (2) is fairly traceable to the challenged conduct, and (3) is likely to be redressed by a favorable decision." *Id.* Article III requires "that an 'actual controversy' persist throughout all stages of litigation." *Id.* at 1951 (quoting *Hollingsworth*, 570 U.S. at 705).

Apple terminated Epic's iOS developer account in August 2020. Then in September 2021 after the district court issued its order holding that Epic breached the DPLA, Apple informed Epic that it had no intention of reinstating Epic's developer account. As a result, Epic has no apps remaining on the App Store. Apple therefore argues that Epic is no longer injured by the anti-steering provision. Apple's argument, however, overlooks two critical aspects of the record. First, while Epic itself has no apps on the App Store, its subsidiaries do—causing Epic to be injured through the anti-steering provision's effects on its subsidiaries' earnings. Second, Epic is a competing game distributor through the Epic Games Store and offers a 12% commission compared to Apple's 30% commission. If consumers can learn about lower app prices, which are made possible by developers' lower costs, and have the ability to substitute to the platform with those lower prices, they will do so—increasing the revenue that the Epic Games Store generates. As such, the district court did not clearly err in finding that Apple's anti-steering provision injures Epic.

B. Merits

As relevant here, the UCL prohibits "any [1] unlawful, [2] unfair or [3] fraudulent business act or practice." Cal. Bus. & Prof. Code § 17200. As the UCL's three-prong structure makes clear, a business practice may be "unfair," and therefore illegal under the UCL, "even if not specifically proscribed by some other law." *Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 180 (1999). The unfair prong is "intentionally framed in its broad, sweeping language, precisely to enable judicial tribunals to deal with the innumerable 'new schemes which the fertility of man's invention would contrive.'" *Id.* (quoting *Am. Philatelic Soc. v. Claibourne*, 3 Cal. 2d 689, 698 (1935)); *see also People ex rel. Mosk v. Nat'l Research Co. of Cal.*, 201 Cal. App. 2d 765, 772 (1962) (the UCL covers unfair practices that "may run the gamut of human ingenuity and chicanery").

The California Supreme Court has refined this "wide standard," *Cel-Tech*, 20 Cal. 4th at 181, into two tests relevant to this litigation. First, to support "any finding of unfairness to *competitors*," a court uses the "tethering" test, which asks whether the defendant's conduct "threatens an incipient violation of an antitrust law, or violates the policy or spirit of one of those laws because its effects are comparable to or the same as a violation of the law, or otherwise significantly threatens or harms competition." *Id.* at 186–87 (emphasis added). Second, to support a finding of unfairness to *consumers*, a court uses the balancing test, which "weigh[s] the utility of the defendant's conduct against the gravity of the harm to the alleged victim." *Progressive W. Ins. Co. v. Super. Ct.*, 135 Cal. App. 4th 263, 285 (2005) (citation omitted). These tests "are not mutually exclusive." *Lozano v. AT&T Wireless Servs., Inc.*, 504 F.3d

718, 736 (9th Cir. 2007) (citing *Schnall v. Hertz Corp.*, 78 Cal. App. 4th 1144 (2000)).

Here, the district court applied both tests. Through the Epic Games Store, Epic is a games-distribution competitor of Apple—triggering the competitor test. Through its subsidiaries that have apps on the App Store, Epic consumes the app transactions that Apple offers in a two-sided market—triggering the consumer test. *Cf. Amex*, 138 S. Ct. at 2286 (each side of two-sided market "jointly consume[s] a single product" (citation omitted)). Applying the tethering test, the court found that the anti-steering provisions "decrease [consumer] information," enabling supracompetitive profits and resulting in decreased innovation. It relied on Apple's own internal communications for the proposition that the anti-steering provision prevents developers from using two of the three "most effective marketing activities," push notifications and email outreach. It then reiterated these factual findings to conclude that the provision also violates the balancing test.

Apple does not directly challenge the district court's application of the UCL's tethering and balancing tests to the facts of this case. Instead, Apple makes two arguments attacking UCL liability as a matter of law. Neither is supported by California law.

1. Safe-Harbor Doctrine

Apple argues that Epic's failure to establish Sherman Act liability forecloses UCL liability pursuant to the UCL's "safe harbor" doctrine, which bars a UCL action where California or federal statutory law "absolutely preclude[s] private causes of action or clearly permit[s] the defendant's conduct." *Zhang v. Sup. Ct.*, 57 Cal. 4th 364, 379–80 (2013). The safe-harbor doctrine emphasizes that there is a

"difference between (1) not making an activity unlawful, and (2) making that activity lawful." *Cel-Tech*, 20 Cal. 4th at 183; *accord Zhang*, 57 Cal. 4th at 379. Accordingly, in every instance where a court found the Sherman Act to preclude a UCL action, a *categorical* antitrust rule formed the basis of the decision. We held that the judge-made baseball exemption—that "the business of providing public baseball games for profit . . . [is] not within the scope of the federal antitrust laws"—precluded a UCL action. *City of San Jose v. Off. of the Com'r of Baseball*, 776 F.3d 686, 689 (9th Cir. 2015) (quoting *Toolson v. N.Y Yankees, Inc.*, 346 U.S. 356, 357 (1953)). A California Court of Appeal similarly held that the *Colgate* doctrine—that it is lawful for a company to unilaterally announce the terms on which it will deal—precluded a UCL action. *Chavez v. Whirlpool Corp.*, 93 Cal. App. 4th 363, 367, 373, 375 (2001).

Neither Apple nor any of its *amici* cite a single case in which a court has held that, when a federal antitrust claim suffers from a *proof deficiency*, rather than a *categorical legal bar*, the conduct underlying the antitrust claim cannot be deemed unfair pursuant to the UCL. Indeed, in a leading case on the safe-harbor exception, the California Supreme Court permitted a UCL claim against a predatory-price scheme to proceed even though the plaintiff failed to prove—as state antitrust law requires—that the defendant intended to harm competition through the scheme. *Cel-Tech*, 20 Cal. 4th at 183. Apple's rule would convert any Rule of Reason shortcoming into a UCL defense and undermine the UCL's three-prong structure by collapsing the "unfair" and "unlawful" prongs into each other. We

reject Apple's proposed rule as foreclosed by California law.[22]

2. Importation of Sherman Act Principles

Apple next argues that two principles from Sherman Act case law preclude UCL liability here. We find neither argument persuasive. First, Apple contends that the Supreme Court's decision in *Amex*—finding in favor of American Express in a suit challenging its anti-steering provision—bars UCL liability stemming from Apple's anti-steering provision. Apple does not explain how *Amex*'s fact- and market-specific application of the first prong of the Rule of Reason establishes a categorical rule approving anti-steering provisions, much less one that sweeps beyond the Sherman Act to reach the UCL. *Amex* was based on the plaintiff's failure to establish direct evidence of anticompetitive effects through a reduction in output, supracompetitive pricing, or excessively high profit margins; it was not a blanket approval of anti-steering provisions. *See Amex*, 138 S. Ct. at 2288.

Second, Apple argues that the UCL mandates trial courts to define a relevant market and then conduct the balancing test within that market (similar to the Rule of Reason). Again, Apple does not cite any California authority for this proposition. Moreover, such a rule runs contrary to California courts' repeated instruction that "[n]o inflexible rule can be laid down as to what conduct will constitute unfair competition." *E.g.*, *Pohl v. Anderson*, 13 Cal. App.

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[22] Several *amici* contend that, under current California case law, the UCL provides insufficient guidance to businesses. That argument, however, fundamentally misunderstands our role when we interpret and apply state law while exercising diversity or supplemental jurisdiction.

2d 241, 242 (1936) (citation omitted). It also contradicts a California Supreme Court decision that conducted something akin to quick-look review (in which a precise market-definition is not needed) when confronted with significant restrictions on the free flow of price information. *See Oakland-Alameda Cnty. Builders' Exch. v. F. P. Lathrop Constr. Co.*, 4 Cal. 3d 354, 363–64 (1971) (invalidating a prohibition on unsealing competitor bids after bidding had culminated on the grounds that it "restrain[ed] open price competition and unlawfully tamper[ed] with the pricing structure").

C. Injunctive Relief

Apple also argues that (1) the district clearly erred when it found that Epic's injuries were irreparable, and (2) it abused its discretion when applying the injunction against all developers, not just Epic's subsidiaries that have apps on the App Store. We disagree.

Even where the UCL authorizes injunctive relief pursuant to state law, a federal court must also ensure that the relief comports with "the traditional principles governing equitable remedies in federal courts." *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 844 (9th Cir. 2020). To issue an injunction, the court must find: "(1) that [the plaintiff] has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction." *Galvez v. Jaddou*, 52 F.4th 821, 831 (9th Cir. 2022) (quoting *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006)). Moreover, injunctive relief must be no "more burdensome to

the defendant than necessary to provide complete relief to the plaintiff[].” *L.A. Haven Hospice, Inc. v. Sebelius*, 638 F.3d 644, 664 (9th Cir. 2011) (quoting *Califano v. Yamasaki*, 442 U.S. 682, 702 (1979)). We review a district court’s decision to grant a permanent injunction, and the scope of that injunction, for an abuse of discretion and review the factual findings underlying the injunction for clear error. *NCAA Antitrust Litig.*, 958 F.3d at 1253.

1. Issuance of the Injunction

First, the district court did not clearly err in finding that Epic suffered an injury for which monetary damages would be inadequate. While economic injury is generally not considered irreparable, it is where the underlying injury does not readily lend itself to calculable money damages. *See Rent-A-Ctr., Inc. v. Canyon Television & Appliance Rental, Inc.*, 944 F.2d 597, 603 (9th Cir. 1991). Here, the district court found that the anti-steering provision “is not easily remedied with money damages,” a finding that has ample support in the record. In 2019, there were over 300,000 games on the App Store. Calculating the damages caused by the anti-steering provision would require a protracted and speculative inquiry into: the availability of each of those 300,000 games on the Epic Games Store, the percentage of revenue on each game that comes from users who multi-home and can therefore substitute, and how high the substitution rate would be among those multi-home users.[23]

[23] Apple also asserts—in one sentence and without any authority—that the district court abused its discretion in failing to hold that Apple’s unclean-hands argument precluded injunctive relief. This passing statement was insufficient to raise this issue on appeal. *See Singh*, 925 F.3d at 1075 n.22.

2. Scope of the Injunction

Second, the district court did not abuse its discretion when setting the scope of the injunctive relief because the scope is tied to Epic's injuries. The district court found that the anti-steering provision harmed Epic by (1) increasing the costs of Epics' subsidiaries' apps that are still on the App Store, and (2) preventing other apps' users from becoming would-be Epic Games Store consumers. Because Epic benefits in this second way from consumers of other developers' apps making purchases through the Epic Games Store, an injunction limited to Epic's subsidiaries would fail to address the full harm caused by the anti-steering provision.

VII. Attorney Fees

We reverse the district court's holding that the DPLA's indemnification provision does not require Epic to pay Apple's attorney fees related to this litigation. Based on the DPLA's choice-of-law provision, we interpret its indemnification provision pursuant to California contact-interpretation principles. We review the district court's interpretation of a contract *de novo*. *Shivkov v. Artex Risk Sols., Inc.*, 974 F.3d 1051, 1058 (9th Cir. 2020).

California courts presume that "[a] clause that contains the words 'indemnify' and 'hold harmless' generally obligates the indemnitor to reimburse the indemnitee for any damages the indemnitee becomes obligated to pay third persons—that is, it relates to *third party* claims, *not* attorney fees incurred in a breach of contract action *between the parties* to the indemnity agreement itself." *Alki Partners, LP v. DB Fund Servs., LLC*, 4 Cal. App. 5th 574, 600 (2016) (emphasis added). However, courts also look to "the context in which the language appears." *Id.* A contract, therefore,

can rebut this presumption with language that "specifically provide[s] for attorney's fees in an action on the contract." *Id.* at 600–01 (emphasis omitted) (citation omitted). For example, the California Court of Appeal read an indemnification clause to cover intra-party disputes when the clause covered all losses "whether or not arising out of third party [c]laims." *Dream Theater, Inc. v. Dream Theater*, 124 Cal. App. 4th 547, 556–57 (2004). And it did the same where an indemnification clause was accompanied by a clause clarifying that, in addition to the remedies listed in the indemnification clause, each party could also seek specific performance for certain breaches of the contract—a provision that "would be unnecessary if indemnification only referred to third party claims." *Zalkind v. Ceradyne, Inc.*, 194 Cal. App. 4th 1010, 1028 (2011).

Turning to the facts here, section 10 of the DPLA provides that Epic "agree[s] to indemnify and hold harmless, and upon Apple's request, defend, Apple[] . . . from any and all claims, losses, liabilities, damages, taxes, expenses and costs, including without limitation, attorneys' fees and court costs . . . , incurred by [Apple] and arising from or related to" several enumerated grounds. One grounds, clause (i), applies to Epic's "breach of any certification, covenant, obligation, representation or warranty in [the DPLA]."

Clause (i) rebuts the *Alki Partners* presumption by "specifically provid[ing] for attorney's fees in an action on the contract." 4 Cal. App. 5th at 600–01. It expressly refers to Epic's "*breach*" of its obligations pursuant to the DPLA—contemplating an intra-party action for breach of contract, not claims by third parties. The surrounding context of section 10 buttresses this conclusion. Section 14.3 of the DPLA disclaims that the agreement "is not for the benefit of any third parties." Indeed, Epic has not identified a single

situation in which a third-party could possibly sue Apple pursuant to clause (i). Therefore, we hold that clause (i) contemplates intra-party disputes and Apple is entitled to attorney fees pursuant to it.[24]

CONCLUSION

To echo our observation from the NCAA student-athlete litigation: There is a lively and important debate about the role played in our economy and democracy by online transaction platforms with market power. Our job as a federal Court of Appeals, however, is not to resolve that debate—nor could we even attempt to do so. Instead, in this decision, we faithfully applied existing precedent to the facts as the parties developed them below. For the foregoing reasons, we **AFFIRM IN PART AND REVERSE AND REMAND IN PART.**

S.R. THOMAS, Circuit Judge, concurring in part and dissenting in part:

I agree with much of the majority opinion. I fully agree that the district court properly granted Epic injunctive relief on its California Unfair Competition Law claims. I also fully agree that the district court properly rejected Epic's illegality defenses to the Developer Program Licensing Agreement ("DPLA") but that, contrary to the district court's decision, the DPLA does require Epic to pay attorney fees for its breach. On the federal claims, I also agree that the district

[24] We express no opinion on what portion of Apple's attorney fees incurred in this litigation can be fairly attributed to Epic's breach of the DPLA, such that they fall within the scope of clause (i).

court erred in defining the relevant market and erred when it held that a non-negotiated contract of adhesion falls outside of the scope of Section 1 of the Sherman Act. However, unlike the majority, I would not conclude that these errors were harmless. An error is harmless if it "do[es] not affect the substantial rights of the parties." 28 U.S.C. § 2111. The district court's errors relate to threshold analytical steps, and the errors affected Epic's substantial rights. Thus, I would reverse the district court and remand to evaluate the claims under the correct legal standard.

"A threshold step in any antitrust case is to accurately define the relevant market . . . ." *Fed. Trade Comm'n v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020). "Without a definition of [the] market there is no way to measure [the defendant's] ability to lessen or destroy competition." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285 (2018) (alterations in original) (quoting *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965)).

I agree with the majority that the district court erred in rejecting Epic's proffered foremarket. The district court rejected the foremarket of mobile operating systems because Apple does not sell or license its operating system separately from its smartphones. But we have previously recognized that such a market can exist. *See Digidyne Corp. v. Data Gen. Corp.,* 734 F.2d 1336, 1338–39 (9th Cir. 1984), *implicitly overruled on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 31 (2006) (holding that separate markets existed for software and hardware even when they were always bundled together).

The district court then rejected Epic's proposed aftermarket of solutions for iOS app payment processing

("IAP") because IAP is integrated into the operations system. This conclusion was not only legally erroneous, but in contradiction to the district court's factual finding of separate demand. *See Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 19 (1984) ("[W]hether one or two products are involved turns . . . on the character of the demand for the two items . . . . not on the functional relation between them . . . .").

I also agree with the majority that the district court erred in holding that a non-negotiated contract of adhesion falls outside of the scope of § 1 of the Sherman Act and, therefore, the Developer Program License Agreement was not a contract covered under § 1. "'*[E]very* commercial agreement'. . . among two or more entities" qualifies as a § 1 agreement. *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1154 n.7 (9th Cir. 2003) (emphasis in original) (quoting *Nw. Wholesale Stationers, Inc. v. Pac. Stationery & Printing Co.*, 472 U.S. 284, 289 (1985)). This includes a contract of adhesion. *See Perma Life Mufflers, Inc. v. Int'l Parts Corp.*, 392 U.S. 134, 141–142 (1968), *overruled on other grounds by Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 777 (1984).

The majority holds that the errors were harmless given the district court's analysis of the remaining steps in the Rule of Reason analysis. However, there is no direct authority for that proposition, and it amounts to appellate court fact-finding. Indeed, the Supreme Court has instructed that "courts usually cannot properly apply the rule of reason without an accurate definition of the relevant market." *Am. Express*, 138 S. Ct. at 2285.

Correction of these errors would have changed the substance of the district court's Rule of Reason analysis. *See*

Qualcomm, 969 F.3d at 992. Unless the correct relevant market is identified, one cannot properly assess anticompetitive effects, procompetitive justifications, and the satisfaction of procompetitive justifications through less anticompetitive means. The analysis is different; therefore, the errors affected substantial rights and cannot be considered harmless.

Relying on the district court's market does not solve this problem. The parties formulated arguments around their own markets—not the district court's market. Remand would have given the parties an opportunity to argue whether the DPLA worked unfair competition in the district court's market.

The effect on substantial rights in this case is magnified by the majority's holding that, under *County of Tuolumne v. Sonora Community Hospital*, when the plaintiff shows anticompetitive effects but fails to show a less restrictive alternative to the defendant's procompetitive justification, the court must balance the anticompetitive harms against the procompetitive benefits. 236 F.3d 1148, 1160 (9th Cir. 2001). The district court did not undertake a formal *Tuolumne* balancing analysis as such, although the majority concludes that the district court's analysis was sufficient. Remand for a formal balancing should be required. Regardless, the effect of the legal errors on any balancing is obvious. The district court analyzed anticompetitive effects in terms of increases in the cost of mobile gaming transactions—the court's relevant market. But the court could have found greater increases in costs if its analysis concerned Epic's markets, and this would change a properly conducted balancing analysis. In essence, any balancing done out of the context of a relevant market necessarily involves putting a thumb on the balancing scale.

Accordingly, the district court's legal errors "affect[ed Epic's] substantial rights" and therefore were not harmless. *See* 28 U.S.C. § 2111. I would remand for the district court to re-analyze the case using the proper threshold determination of the relevant market.

Therefore, I respectfully concur in part and dissent in part.